Repair-Parts

ProMix® 2KS

312777E

EN

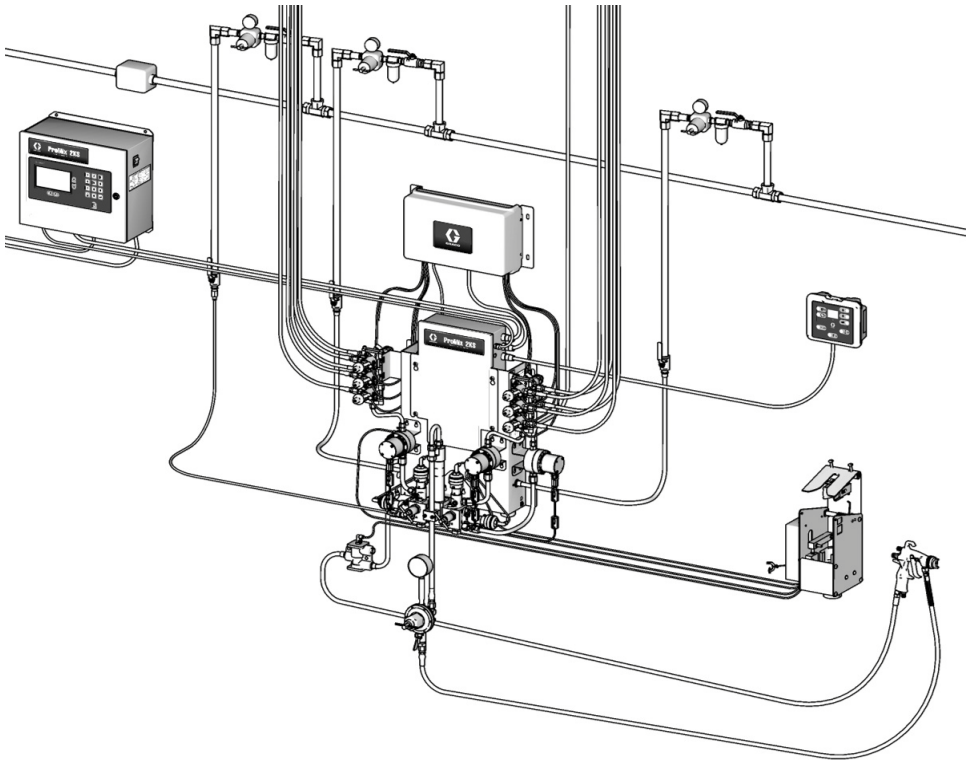
Plural Component Proportioner

Manual system for proportional mixing of plural component coatings.
For professional use only.

For use in explosive atmospheres (except the EasyKey).

Important Safety Instructions
Read all warnings and instructions in this manual. Save these instructions.

See page 4 for model information, including maximum working pressure. Equipment approval labels are on page 3. Some components shown are not included with all systems.



TI12504a

0359

FM C US APPROVED

II 2 G

PROVEN QUALITY. LEADING TECHNOLOGY.

Contents

Related Manuals 3
Equipment Approvals 3
System Configuration and Part Numbers 4
Configurator Key 4
Standard Features 5
Accessories 7
Warnings 8
Important Two-Component Material Information 10
Isocyanate Conditions 10
Material Self-ignition 10
Keep Components A and B Separate 10
Moisture Sensitivity of Isocyanates 10
Changing Materials 10
Grounding 11
Check Resistance 11
Pressure Relief Procedure 11
Troubleshooting 15
Alarm Codes 15
Solenoid Troubleshooting 16
Fluid Manifold Troubleshooting 18
EasyKey Barrier Board Diagnostics 19
EasyKey Display Board Diagnostics 20
Fluid Station Control Board Diagnostics 23
Booth Control Troubleshooting 26
Color Change Board Diagnostics 28
Schematic Diagrams 30
System Pneumatic Schematic 30
EasyKey Electrical Schematic 31
System Electrical Schematic 32
Tubing Schematic 34
Service 36
Before Servicing 36
After Servicing 36
Servicing EasyKey 37
Replacing Air Filter Element 41
Wall Mount Fluid Station 42
Servicing Flow Meters 46
Servicing Fluid Manifold 47
Servicing Color Change Module, Color/Catalyst Valves, and Dump Valves 47
Parts 49
Configurator Key 49
ProMix 2KS Manual System 50
EasyKey Controls 52
Available Cables 53
Wall Mount Fluid Station 54
Color Change Accessory Kits 56
Technical Data 57
Graco Standard Warranty 58
Graco Information 58

Related Manuals

Component Manuals in English

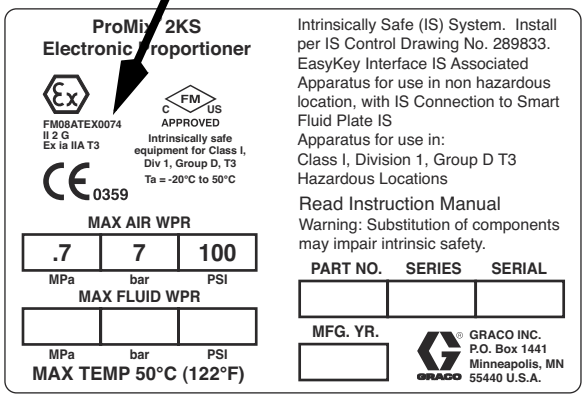
Manual	Description
312775	ProMix 2KS Manual System Installation
312776	ProMix 2KS Manual System Operation
312781	Fluid Mix Manifold
312782	Dispense Valve
312783	Color Change Valve Stacks
312787	Color Change Module Kit
312784	Gun Flush Box Kits
310745	Gun Air Shutoff Kit
312786	Dump Valve and Third Purge Valve Kits
312785	Network Communication Kits
308778	G3000/G3000HR Flow Meter
313599	Coriolis Flow Meter
313290	Floor Stand Kit
313542	Beacon Kit
313386	Basic Web Interface/Advanced Web Interface
406799	15V256 Automatic System Upgrade Kit
406800	15V825 Discrete I/O Board Kit

Equipment Approvals

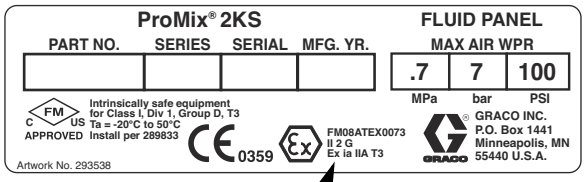
Equipment approvals appear on the following labels which are attached to the Fluid Station and EasyKey™. See FIG. 1 on page 4 for label locations.

EasyKey and Fluid Station Label

ATEX Certificate is listed here



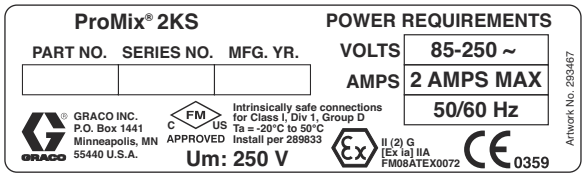
Fluid Station Label



TI13581a

ATEX Certificate is listed here

EasyKey Label



TI13582a

ATEX Certificate is listed here

System Configuration and Part Numbers

Configurator Key

The configured part number for your equipment is printed on the equipment identification labels. See FIG. 1 for location of the identification labels. The part number includes one digit from each of the following six categories, depending on the configuration of your system.

Manual System	Control and Display	A and B Meter	Color Valves	Catalyst Valves	Applicator Handling
M	D = EasyKey with LCD Display	0 = No Meters 1 = G3000 (A and B) 2 = G3000HR (A and B) 3 = 1/8 in. Coriolis (A) and G3000 (B) 4 = G3000 (A) and 1/8 in. Coriolis (B) 5 = 1/8 in. Coriolis (A) and G3000HR (B) 6 = G3000HR (A) and 1/8 in. Coriolis (B) 7 = 1/8 in. Coriolis (A and B)	0 = No Valves (single color) 1 = Two Valves (low pressure) 2 = Four Valves (low pressure) 3 = Seven Valves (low pressure) 4 = Twelve Valves (low pressure) 5 = Two Valves (high pressure) 6 = Four Valves (high pressure)	0 = No Valves (single catalyst) 1 = Two Valves (low pressure) 2 = Four Valves (low pressure) 3 = Two Valves (high pressure)	1 = One Air Flow Switch Kit 2 = Two Air Flow Switch Kits 3 = One Gun Flush Box Kit 4 = Two Gun Flush Box Kits

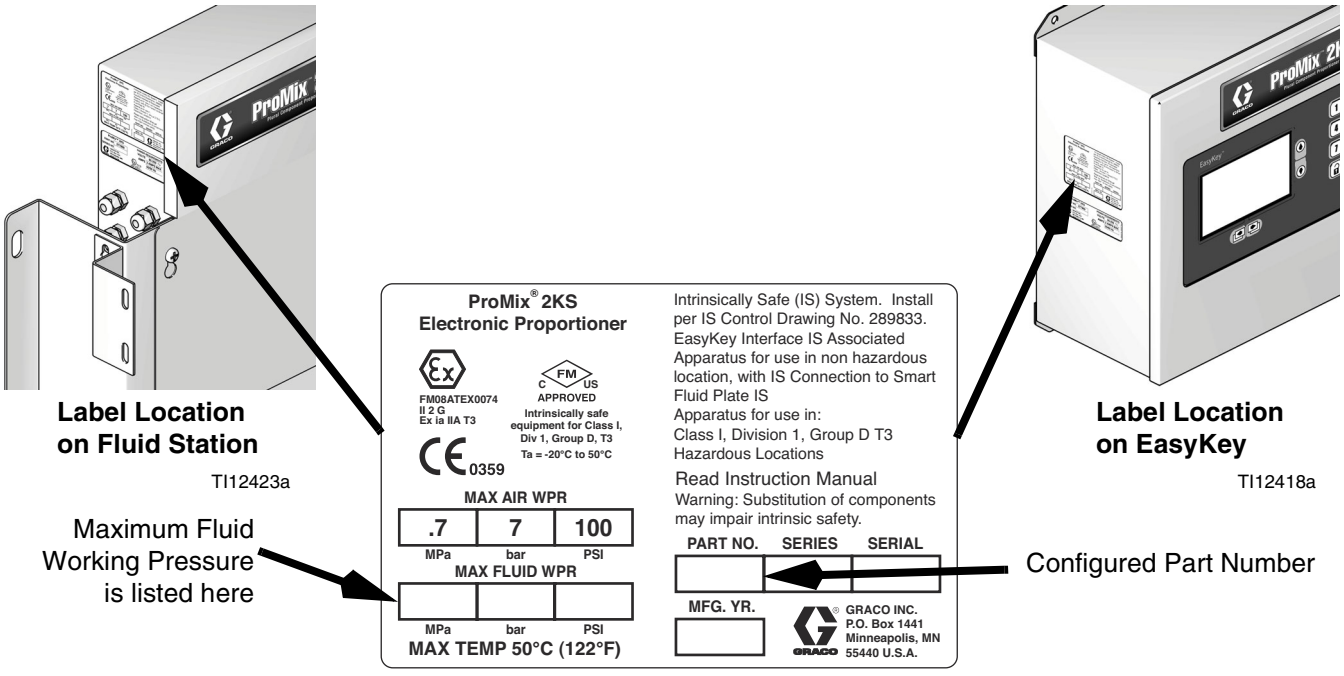


FIG. 1: Identification Label

Hazardous Location Approval
Models using a G3000, G3000HR, or intrinsically safe Coriolis meter for both A and B meters are approved for installation in a Hazardous Location - Class I, Div I, Group D, T3 or Zone I Group IIA T3.
Maximum Working Pressure
Maximum working pressure rating is dependent on the fluid component options selected. ***The pressure rating is based on the rating of the lowest rated fluid manifold component.*** Refer to the component pressure ratings below. *Example:* Model MD2531 has a maximum working pressure of 3000 psi (21 MPa, 210 bar). **Check the identification label on the EasyKey or fluid station for the system maximum working pressure. See FIG. 1.**
ProMix Fluid Manifold Components Maximum Working Pressure
Base System (no meters [option 0], no color/catalyst change [option 0]). . . . . 4000 psi (27.58 MPa, 275.8 bar) Meter Option 1 and 2 (G3000 or G3000HR) . . . . . 4000 psi (27.58 MPa, 275.8 bar) Meter Option 3, 4, 5, 6, and 7 (one or two Coriolis Meters) . . . . . 2300 psi (15.86 MPa, 158.6 bar) Color Change Option 1, 2, 3 and 4 and Catalyst Change Option 1 and 2 (low pressure valves) . . . . . 300 psi (2.07 MPa, 20.6 bar) Color Change Option 5 and 6 and Catalyst Change Option 3 (high pressure valves) . . . . . 3000 psi (21 MPa, 210 bar)
Flow Meter Fluid Flow Rate Range
G3000. . . . . 75-3800 cc/min. (0.02-1.0 gal./min.) G3000HR . . . . . 38-1900 cc/min. (0.01-0.50 gal./min.) Coriolis Meter . . . . . 20-3800 cc/min. (0.005-1.00 gal./min.) S3000 Solvent Meter (accessory) . . . . . 38-1900 cc/min. (0.01-0.50 gal./min.)

Standard Features

Feature
EasyKey with LCD
Fiber Optic and Power Cables, 50 ft (15.25 m)
Wall Mount Fluid Station, 50 cc Integrator and Static Mixer
B Side Dump Valve, if catalyst valve(s) is selected
Booth Control
Basic Web Interface

Accessories

Accessory
Gun Flush Box Gun Insert Selection
15V354 Third Purge Valve Kit
15V536 Solvent Flow Switch Kit
15V213 Power Cable, 100 ft (30.5 m)
15G710 Fiber Optic Cable, 100 ft (30.5 m)
15U955 Injection Kit for Dynamic Dosing
15V034 10 cc Integrator Kit
15V033 25 cc Integrator Kit
15V021 50 cc Integrator Kit
24B618 100 cc Integrator Kit
15W034 Strobe Light Alarm Indicator Kit
15V337 Advanced Web Interface
15V256 Automatic Mode Upgrade Kit
280555 S3000 Solvent Flow Meter Kit

Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbols refer to procedure-specific risks. When these symbols appear in the body of this manual, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear throughout the body of this manual where applicable.

⚠ WARNING

FIRE AND EXPLOSION HAZARD

Flammable fumes, such as solvent and paint fumes, in **work area** can ignite or explode. To help prevent fire and explosion:

- Use equipment only in well ventilated area.
- Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static arc).
- Keep work area free of debris, including solvent, rags and gasoline.
- Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present.
- Ground all equipment in the work area. See **Grounding** instructions.
- Use only grounded hoses.
- Hold gun firmly to side of grounded pail when triggering into pail.
- If there is static sparking or you feel a shock, **stop operation immediately.** Do not use equipment until you identify and correct the problem.
- Keep a working fire extinguisher in the work area.

ELECTRIC SHOCK HAZARD

This equipment must be grounded. Improper grounding, setup, or usage of the system can cause electric shock.

- Turn off and disconnect power at main switch before disconnecting any cables and before servicing equipment.
- Connect only to grounded power source.
- All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations.

INTRINSIC SAFETY

Intrinsically safe equipment that is installed improperly or connected to non-intrinsically safe equipment will create a hazardous condition and can cause fire, explosion, or electric shock. Follow local regulations and the following safety requirements.

- Only models with a G3000, G250, G3000HR, G250HR, or intrinsically safe Coriolis meter are approved for installation in a Hazardous Location - Class I, Div I, Group D, T3 or Zone I Group IIA T3.
- Do not install equipment approved only for a non-hazardous location in a hazardous area. See the ID label for the intrinsic safety rating of your model.
- Do not substitute or modify system components as this may impair intrinsic safety.

SKIN INJECTION HAZARD

High-pressure fluid from gun, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. **Get immediate surgical treatment.**

- Tighten all fluid connections before operating the equipment.
- Do not point gun at anyone or at any part of the body.
- Do not put your hand over the spray tip.
- Do not stop or deflect leaks with your hand, body, glove, or rag.
- Follow **Pressure Relief Procedure** in this manual, when you stop spraying and before cleaning, checking, or servicing equipment.

⚠ WARNING

EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.

- Do not operate the unit when fatigued or under the influence of drugs or alcohol.
- Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See **Technical Data** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. See **Technical Data** in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request MSDS forms from distributor or retailer.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.
- Do not alter or modify equipment.
- Use equipment only for its intended purpose. Call your distributor for information.
- Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not kink or over bend hoses or use hoses to pull equipment.
- Keep children and animals away from work area.
- Comply with all applicable safety regulations.

TOXIC FLUID OR FUMES HAZARD

Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.

- Read MSDS's to know the specific hazards of the fluids you are using.
- Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.
- Always wear chemically impermeable gloves when spraying or cleaning equipment.

PERSONAL PROTECTIVE EQUIPMENT

You must wear appropriate protective equipment when operating, servicing, or when in the operating area of the equipment to help protect you from serious injury, including eye injury, inhalation of toxic fumes, burns, and hearing loss. This equipment includes but is not limited to:

- Protective eyewear
- Clothing and respirator as recommended by the fluid and solvent manufacturer
- Gloves
- Hearing protection

Important Two-Component Material Information

Isocyanate Conditions

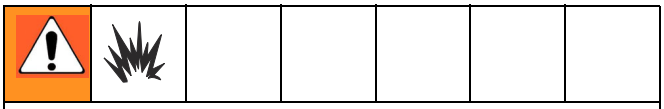
Spraying or dispensing materials containing isocyanates creates potentially harmful mists, vapors, and atomized particulates.

Read material manufacturer's warnings and material MSDS to know specific hazards and precautions related to isocyanates.

Prevent inhalation of isocyanate mists, vapors, and atomized particulates by providing sufficient ventilation in the work area. If sufficient ventilation is not available, a supplied-air respirator is required for everyone in the work area.

To prevent contact with isocyanates, appropriate personal protective equipment, including chemically impermeable gloves, boots, aprons, and goggles, is also required for everyone in the work area.

Material Self-ignition



Some materials may become self-igniting if applied too thickly. Read material manufacturer's warnings and material MSDS.

Keep Components A and B Separate

Cross-contamination can result in cured material in fluid lines which could cause serious injury or damage equipment. To prevent cross-contamination of the equipment's wetted parts, **never** interchange component A (isocyanate) and component B (resin) parts.

Moisture Sensitivity of Isocyanates

Isocyanates (ISO) are catalysts used in two component coatings. ISO will react with moisture (such as humidity) to form small, hard, abrasive crystals, which become suspended in the fluid. Eventually a film will form on the surface and the ISO will begin to gel, increasing in viscosity. If used, this partially cured ISO will reduce performance and the life of all wetted parts.

NOTE: The amount of film formation and rate of crystallization varies depending on the blend of ISO, the humidity, and the temperature.

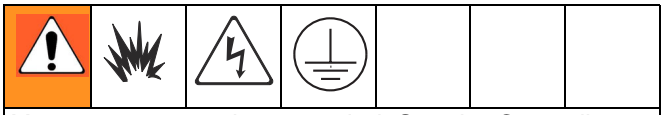
To prevent exposing ISO to moisture:

- Always use a sealed container with a desiccant dryer in the vent, or a nitrogen atmosphere. **Never** store ISO in an open container.
- Use moisture-proof hoses specifically designed for ISO, such as those supplied with your system.
- Never use reclaimed solvents, which may contain moisture. Always keep solvent containers closed when not in use.
- Never use solvent on one side if it has been contaminated from the other side.
- Always lubricate threaded parts with ISO pump oil or grease when reassembling.

Changing Materials

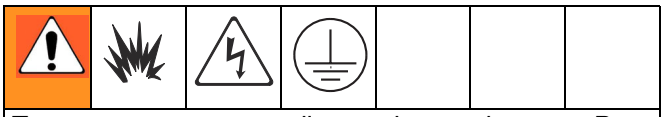
- When changing materials, flush the equipment multiple times to ensure it is thoroughly clean.
- Always clean the fluid inlet strainers after flushing.
- Check with your material manufacturer for chemical compatibility.
- Most materials use ISO on the A side, but some use ISO on the B side.

Grounding



Your system must be grounded. See the Grounding instructions in your ProMix 2KS Installation manual.

Check Resistance



To ensure proper grounding, resistance between ProMix components and true earth ground **must** be less than 1 ohm. Read **Warnings**, page 8.

Have a qualified electrician check resistance between each ProMix component and true earth ground. If resistance is greater than 1 ohm, a different ground site may be required. Do not operate the system until the problem is corrected.

Pressure Relief Procedure

NOTE: The following procedures relieve all fluid and air pressure in the ProMix 2KS system. Use the procedure appropriate for your system configuration.

Relieve pressure when you stop spraying, before changing spray tips, and before cleaning, checking, or servicing equipment.

Single Color Systems

1. While in Mix mode (gun triggered), shut off the A and B fluid supply pumps/pressure pots. Close all fluid shutoff valves at the pump outlets.
2. With the gun triggered, push the manual override on the A and B dose valve solenoids to relieve pressure. See FIG. 4.

   NOTE: If a Dose Time alarm (E-7, E-8) occurs, clear the alarm.
3. Do a complete system purge, following the instructions under **Purging Using Recipe 0** in your system Operation manual.
4. Shut off the fluid supply to the solvent purge valve (SPV) and the air supply to the air purge valve (APV), FIG. 3.
5. With the gun triggered, push the manual override on the A and B purge valve solenoids to relieve air and solvent pressure. See FIG. 4. Verify that solvent pressure is reduced to 0.

   NOTE: If a Purge Volume alarm (E-11) occurs, clear the alarm.

Systems with Color Change and without Dump Valves

NOTE: This procedure relieves pressure through the sampling valve.

1. Complete all steps under **Single Color Systems**, page 11.
2. Close the A side shutoff valve (SVA), FIG. 3. Open the A side sampling valve (RVA).
3. Direct the A side sampling tube into a waste container.
4. See FIG. 2. Open the color change module. Using the solenoid identification labels as a guide, press and hold the override button on each color solenoid until flow from the sampling valve stops.
5. Press and hold the solvent solenoid override until clean solvent comes from the sampling valve, then release.
6. Shutoff the solvent supply to the color change stack solvent valve.
7. Press and hold the solvent solenoid override until solvent flow from the sampling valve stops.
8. Open the A side shutoff valve (SVA), FIG. 3. Close the A side sampling valve (RVA).

Systems with Color/Catalyst Change and Dump Valves

NOTE: This procedure relieves pressure through the dump valves.

1. Complete all steps under **Single Color Systems**, page 11.
2. Shut off all color and catalyst supplies to the valve stacks.
3. Press and hold the dump valve A solenoid override, FIG. 4.
4. See FIG. 2. Open the color change module. Using the solenoid identification labels as a guide, press and hold the override button on each color solenoid until flow from dump valve A stops.
5. Press and hold the dump valve B solenoid override, FIG. 4.
6. See FIG. 2. Using the solenoid identification labels as a guide, press and hold the override button on each catalyst solenoid until flow from dump valve B stops.
7. Press and hold the dump valve A solenoid override, FIG. 4.
8. Press and hold the A side (color) solvent solenoid override until clean solvent comes from the dump valve, then release.
9. Press and hold the dump valve B solenoid override, FIG. 4.
10. Press and hold the B side (catalyst) solvent solenoid override until clean solvent comes from the dump valve, then release.
11. Shutoff the solvent supply to the color/catalyst change stack solvent valves.
12. Press and hold the A and B solvent solenoid overrides and dump valve overrides until solvent flow from the dump valves stops.

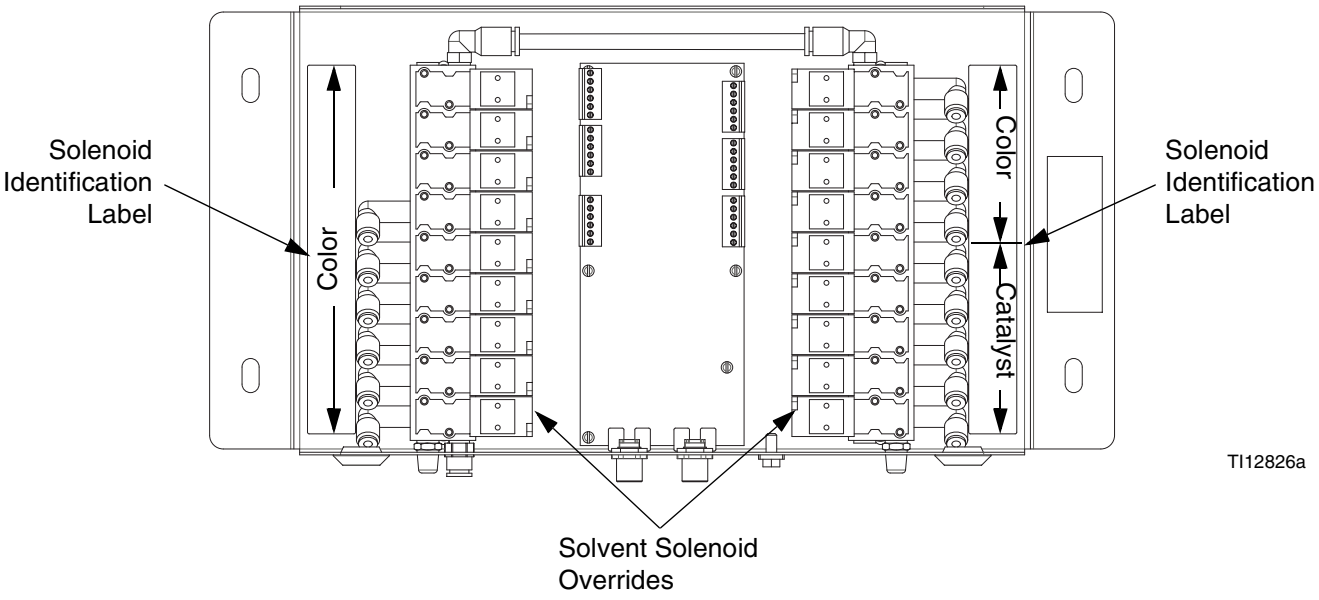
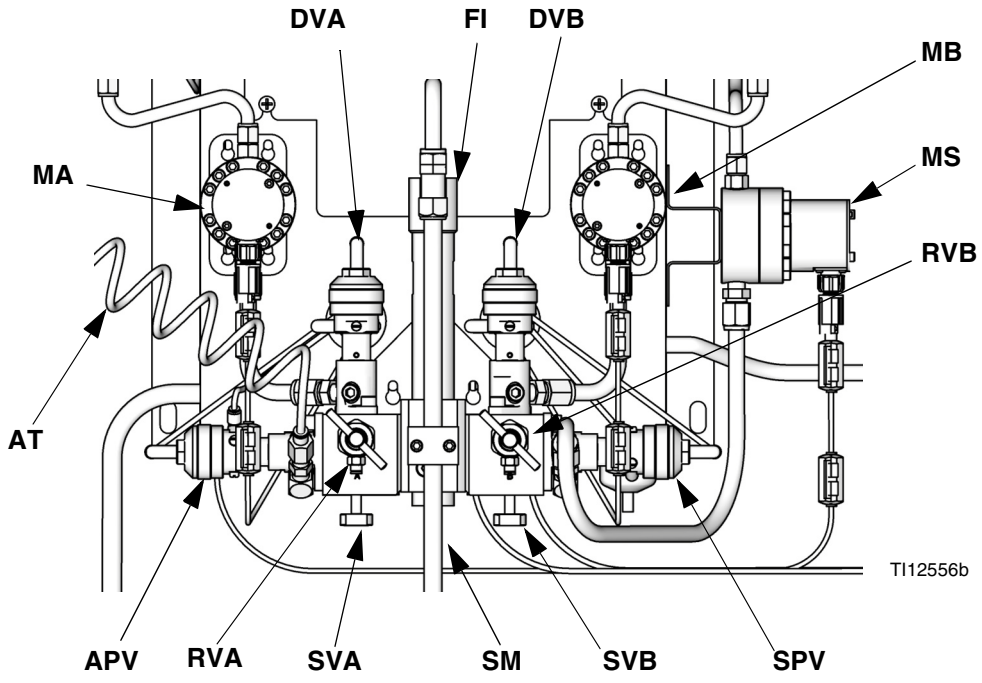


FIG. 2: Color Change Solenoids



Key:

MA	Component A Meter
DVA	Component A Dose Valve
RVA	Component A Sampling Valve
SVA	Component A Shutoff Valve
MB	Component B Meter
DVB	Component B Dose Valve
RVB	Component B Sampling Valve
SVB	Component B Shutoff Valve
MS	Solvent Meter (accessory)
SPV	Solvent Purge Valve
APV	Air Purge Valve
SM	Static Mixer
FI	Fluid Integrator
AT	Air Purge Valve Air Supply Tube

FIG. 3. Wall Mount Fluid Station

Troubleshooting

Follow **Pressure Relief Procedure**, page 11, before cleaning, checking, or servicing equipment.

NOTE: Do not use the fluid in the line that was dispensed off ratio as it may not cure properly.

Alarm Codes

Table 1 lists the system alarm codes. See the system operation manual for complete information on alarm troubleshooting.

Table 1: System Alarm Codes

Code	Description
E-1	Communication Error Alarm
E-2	Potlife Alarm
E-3	Ratio High Alarm
E-4	Ratio Low Alarm
E-5	Overdose A/B Dose Too Short Alarm
E-6	Overdose B/A Dose Too Short Alarm
E-7	Dose Time A Alarm
E-8	Dose Time B Alarm
E-9	Mix in Setup Alarm
E-10	Remote Stop Alarm
E-11	Purge Volume Alarm
E-12	CAN Network Communication Error Alarm
E-13	High Flow Alarm
E-14	Low Flow Alarm
E-15	System Idle Warning
E-16	Setup Change Warning
E-17	Power On Warning
E-18	Defaults Loaded Warning
E-19	I/O Alarm (see Operation Manual for details)
E-20	Purge Initiate Alarm
E-21	Material Fill Alarm
E-22	Tank A Low Alarm
E-23	Tank B Low Alarm
E-24	Tank S Low Alarm
E-25	Auto Dump Complete Alarm
E-26	Color/Catalyst Purge Alarm
E-27	Color/Catalyst Fill Alarm

Solenoid Troubleshooting

NOTE: Refer to the **Schematic Diagrams**, page 30.

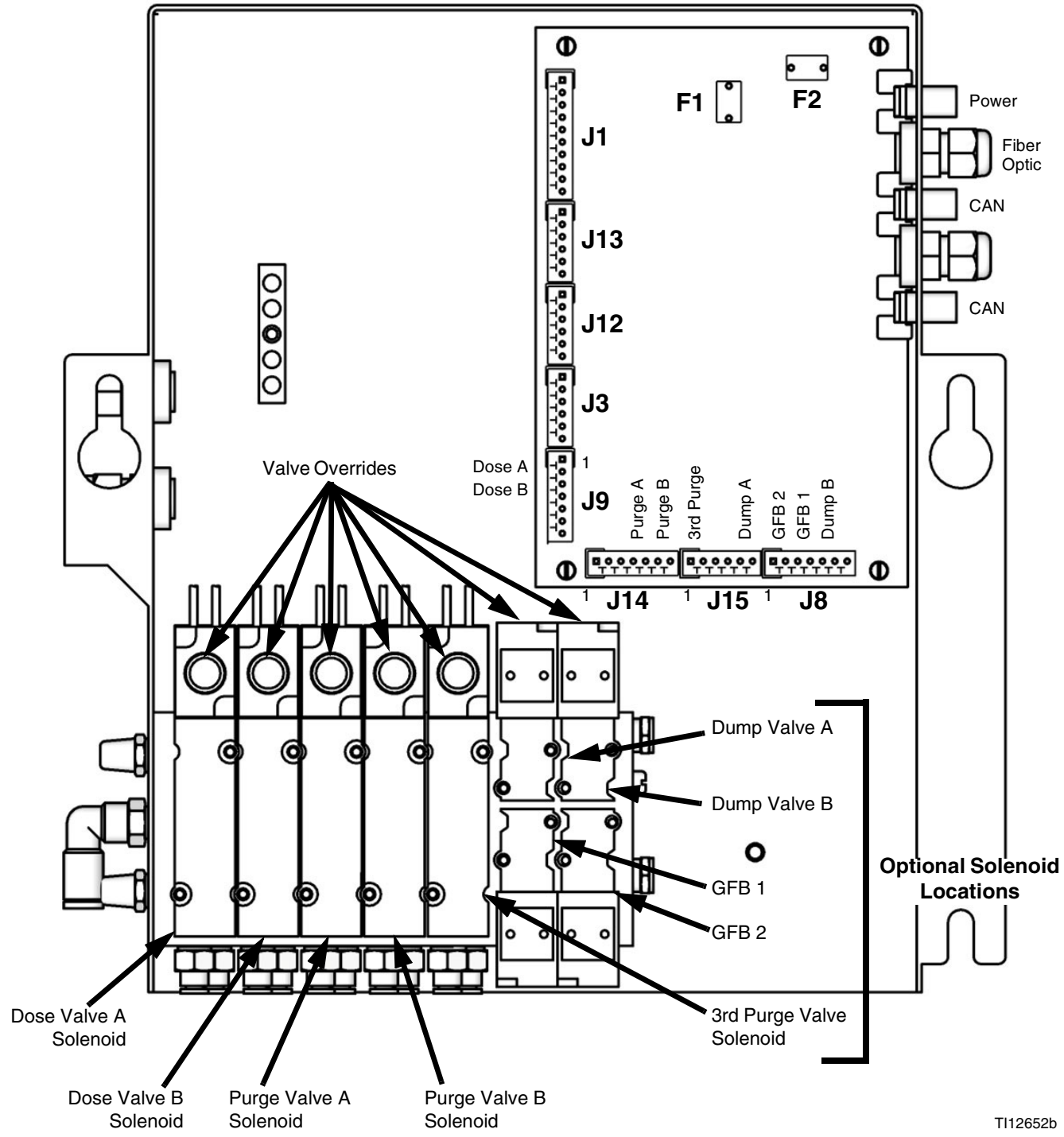


FIG. 4: Fluid Station Board and Solenoids

NOTE: Refer to the **Schematic Diagrams**, page 30.

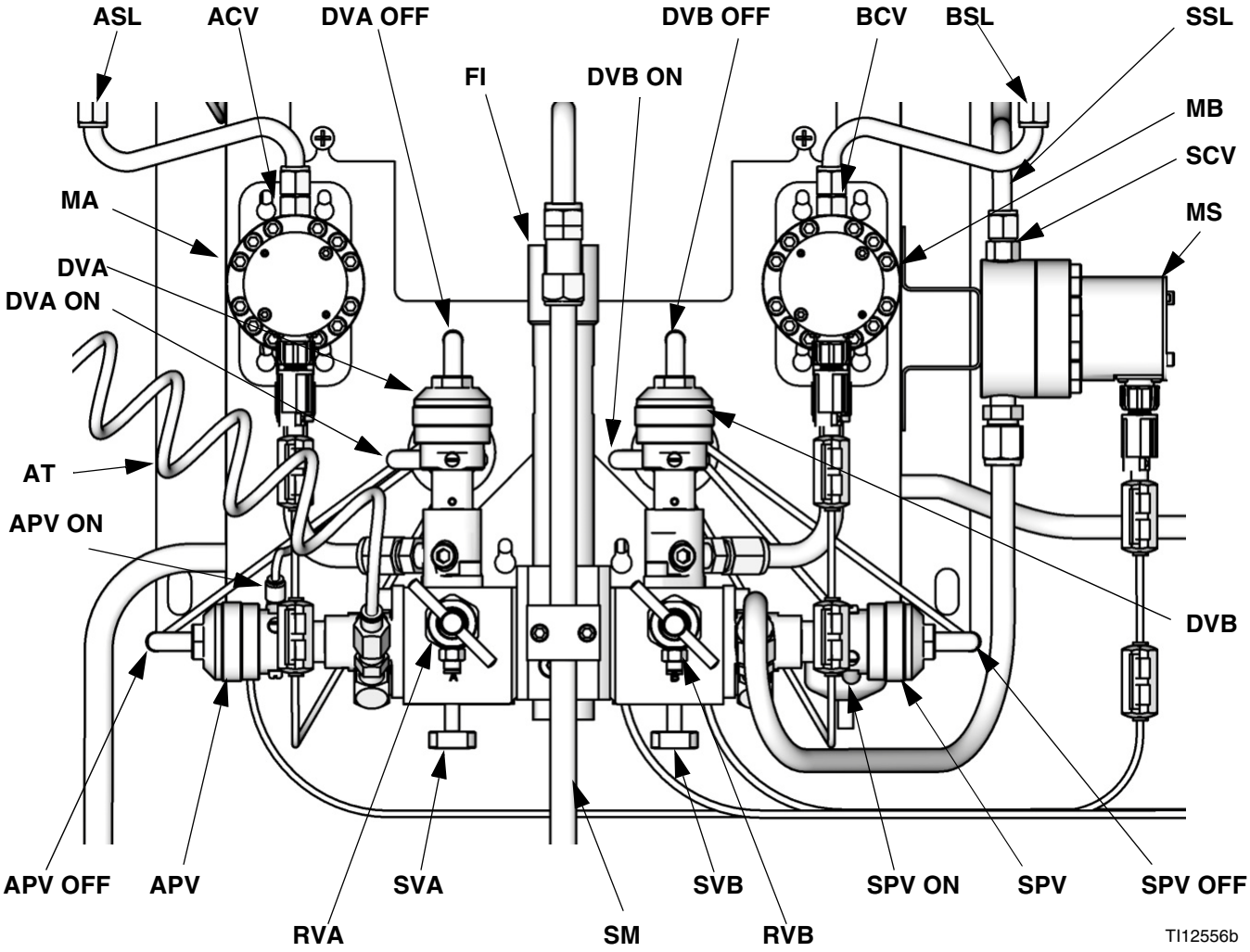
If the dispense or purge valves are not turning on or off correctly, it could be caused by one of the following.

Table 2: Solenoid Troubleshooting

Cause	Solution
1. Air regulator pressure set too high or too low.	Check air pressure. 80-90 psi (550-630 kPa, 5.5-6.3 bar) is commonly used. Do not go below 70 psi (490 kPa, 4.9 bar) or above 120 psi (0.8 MPa, 8 bar),
2. Air or electrical lines damaged or connections loose.	Visually inspect air and electrical lines for kinks, damage, or loose connections. Service or replace as needed.
3. Solenoid failure.	Manually operate the valves by removing the Fluid Station cover and pressing and releasing solenoid valve override buttons. FIG. 4. Use the control board diagnostics to check the signals. If signals do not occur correctly, go to Cause 4. Valves should snap open and shut quickly. If the valves actuate slowly, it could be caused by: • Air pressure to the valve actuators is too low. See Cause 1. • Solenoid is clogged. Make sure air supply has 5 micron filter installed. • Something is restricting the solenoid or tubing. Check for air output from air line for corresponding solenoid when valve is actuated. Clear restriction. • A dose valve is turned in too far. See ProMix 2KS Operation manual for settings. • Fluid pressure is high and air pressure is low. • Fluid seal in valve has failed. See corresponding valve manual for repair information.
4. Solenoid, cable, or fluid station control board failure.	Check voltage level to solenoid by pulling solenoid connector and checking voltage between pins. If voltage is 9-15 VDC, the solenoid is damaged. Replace solenoid or correct electrical line problem. If there is no voltage, replace the board.
5. Blown fuse.	Check condition of fuses F1 and F2. F1 powers J9 and J14 (Dose Valve A and B and Purge Valve A and B solenoids). F2 powers J8 and J15 (3rd Purge Valve, Dump Valve A and B, and GFB 1 and 2 solenoids).

Fluid Manifold Troubleshooting

See FIG. 5. To remove the fluid manifold, see page 47. See manual 312781 for complete information on the fluid manifold.



Key:

Component A Side

MA	Component A Meter
DVA	Component A Dose Valve
RVA	Component A Sampling Valve
SVA	Component A Shutoff Valve
APV	Air Purge Valve
AT	Air Purge Valve Air Supply Tube
ASL	Component A Supply Line
ACV	Meter A Check Valve

Component B Side

MB	Component B Meter
DVB	Component B Dose Valve
RVB	Component B Sampling Valve
SVB	Component B Shutoff Valve
BSL	Component B Supply Line
BCV	Meter B Check Valve
SPV	Solvent Purge Valve
SSL	Solvent Supply Line
MS	Solvent Meter (accessory)
SCV	Solvent Meter Check Valve

Mixed Material

SM	Static Mixer
FI	Fluid Integrator

FIG. 5. Fluid Manifold

EasyKey Barrier Board Diagnostics

See FIG. 6 and Table 3 to troubleshoot the EasyKey barrier board. Also see the **EasyKey Electrical Schematic** on page 31 and the **System Electrical Schematic** on pages 32 and 33.

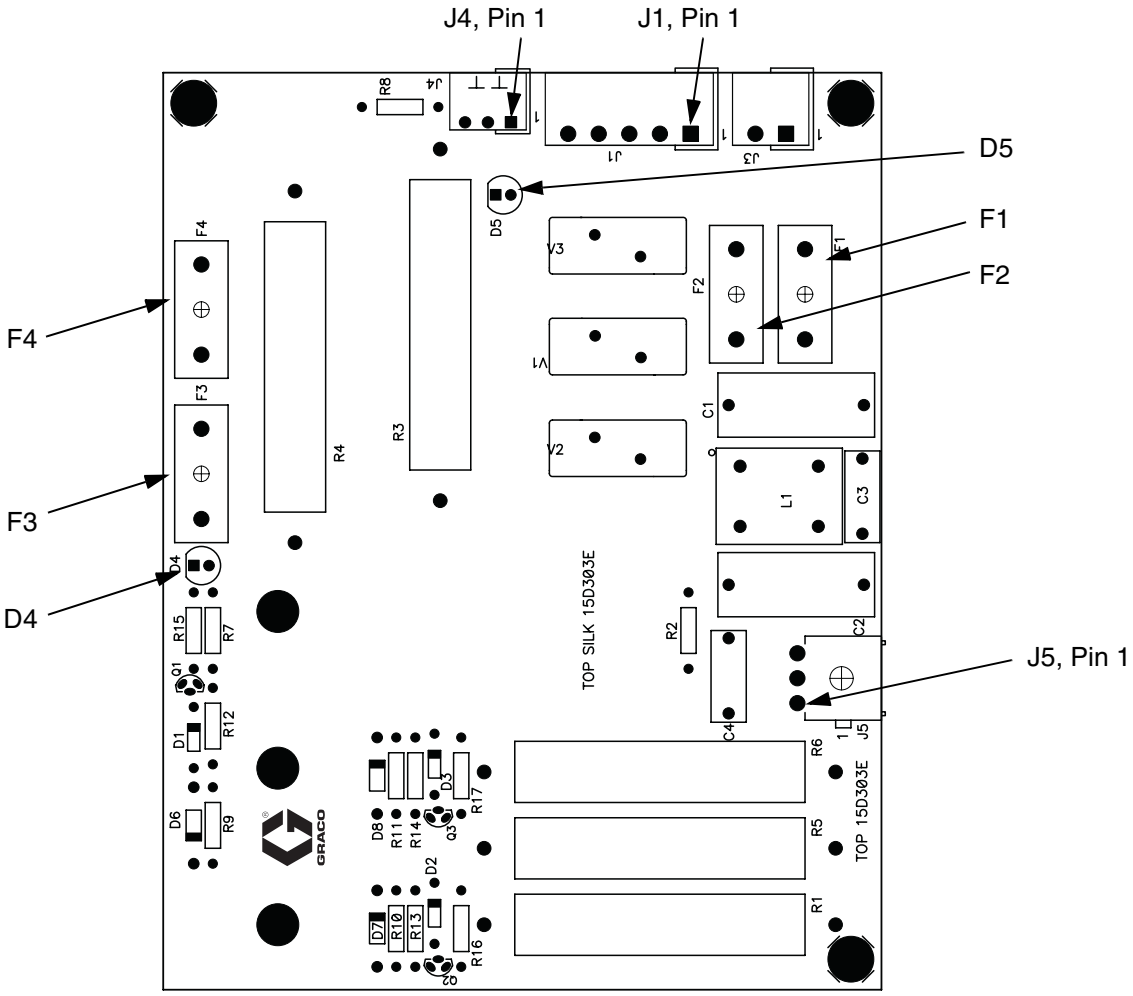


FIG. 6: 255786 EasyKey Barrier Board

Table 3: EasyKey Barrier Board Diagnostics

Connector	Description	Diagnosis
J1	AC Power Input	n/a
J4	24 Vdc Power Input to EasyKey Display Board	D5 turns on.
J5	12 Vdc Power Output to Fluid Station Board	D4 turns on if barrier board is functioning. If D4 does not turn on, fuses F3 or F4 (Graco Part No. 15D979) are blown or there is no input power at J4. If there is no input power (D5 does not light), fuses F1 and F2 (Graco Part No. 114788) may be blown.

EasyKey Display Board Diagnostics

See FIG. 7 and Table 4 to troubleshoot the EasyKey display board. Also see the **EasyKey Electrical Schematic** on page 31 and the **System Electrical Schematic** on pages 32 and 33.

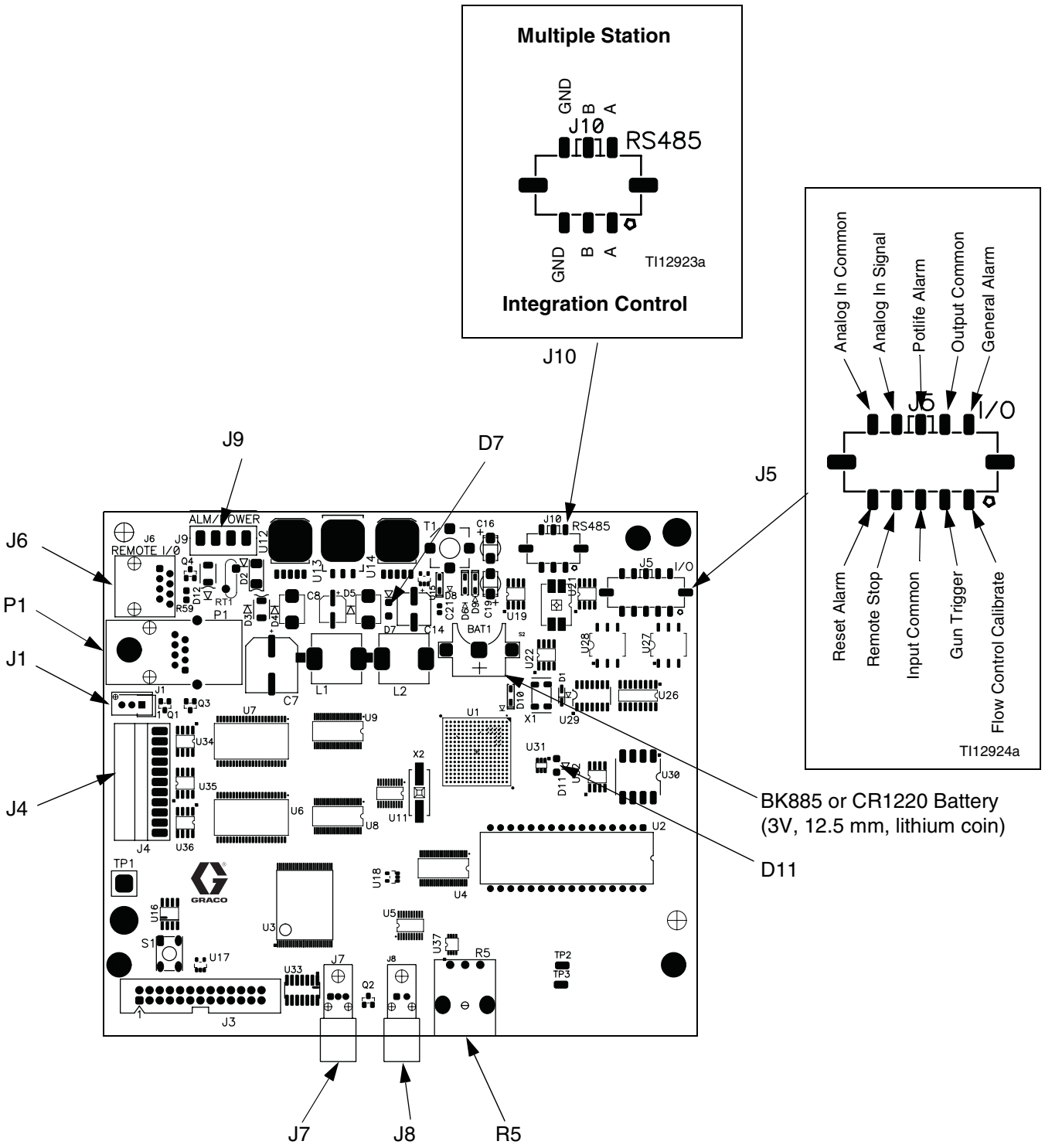


FIG. 7: 255767 EasyKey Display Board

Table 4: EasyKey Display Board Diagnostics

Connector/ Indicator	Description
J1	Graphic Display Backlight
J4	Ribbon Cable to Membrane
J5	Inputs and Outputs
J6	Remote I/O
J7	Fiber Optic Cable Input (black)
J8	Fiber Optic Cable Output (blue)

Connector/ Indicator	Description
J9	24 Vdc Power Input/Alarm Output
J10	RS485 Communication Terminals
D7 (green)	LED turns on when power is supplied to board
D11 (yellow)	LED blinks (heartbeat) when board is operating
P1	Ethernet Port
R5	Display Contrast/Dimmer Switch (turn by hand)

Fluid Station Control Board Diagnostics

See FIG. 8, FIG. 9, and Table 5 to troubleshoot the fluid station control board. Also see the **System Electrical Schematic** on pages 32 and 33.

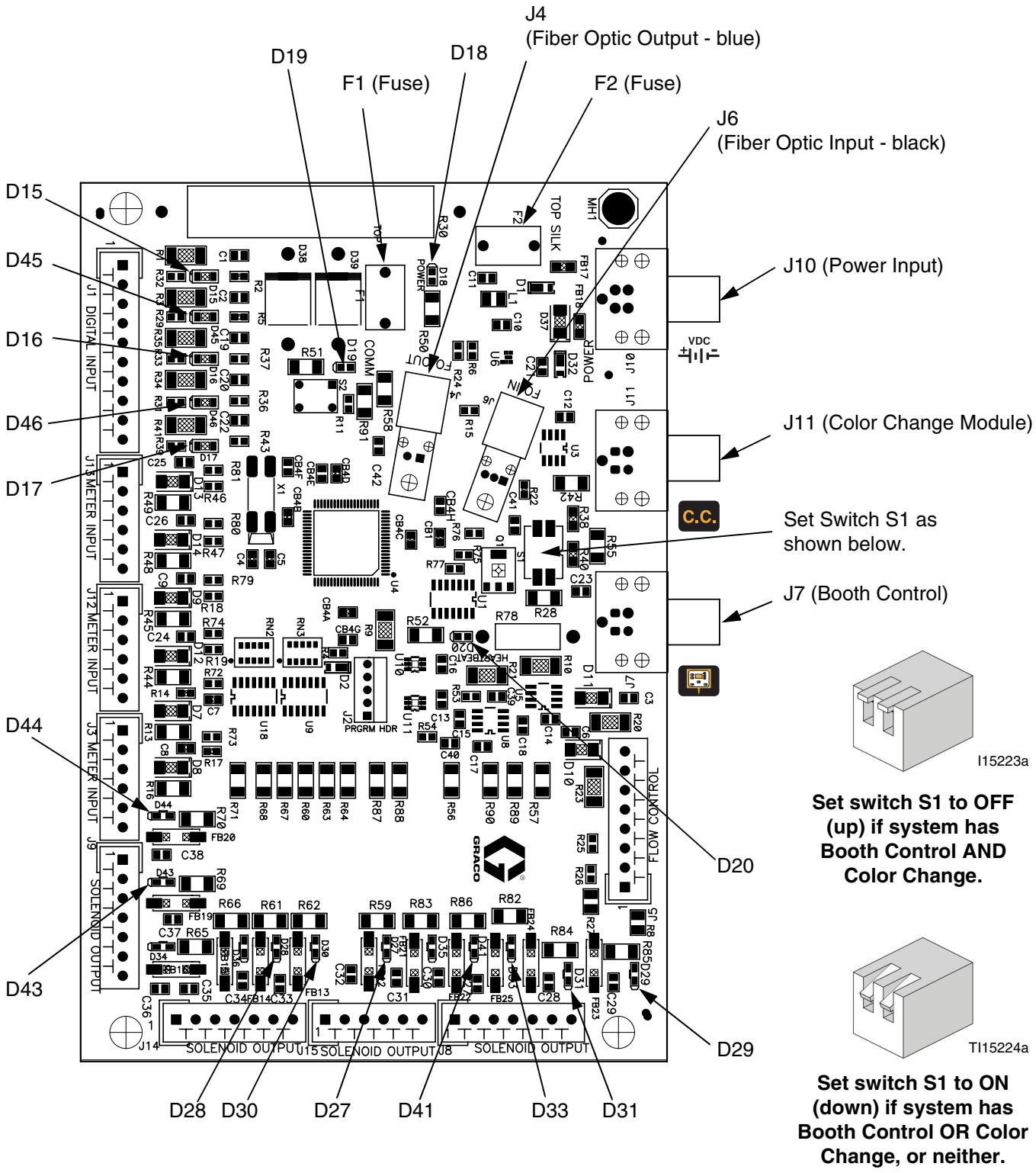


FIG. 8: 255765 Fluid Station Control Board Indicators

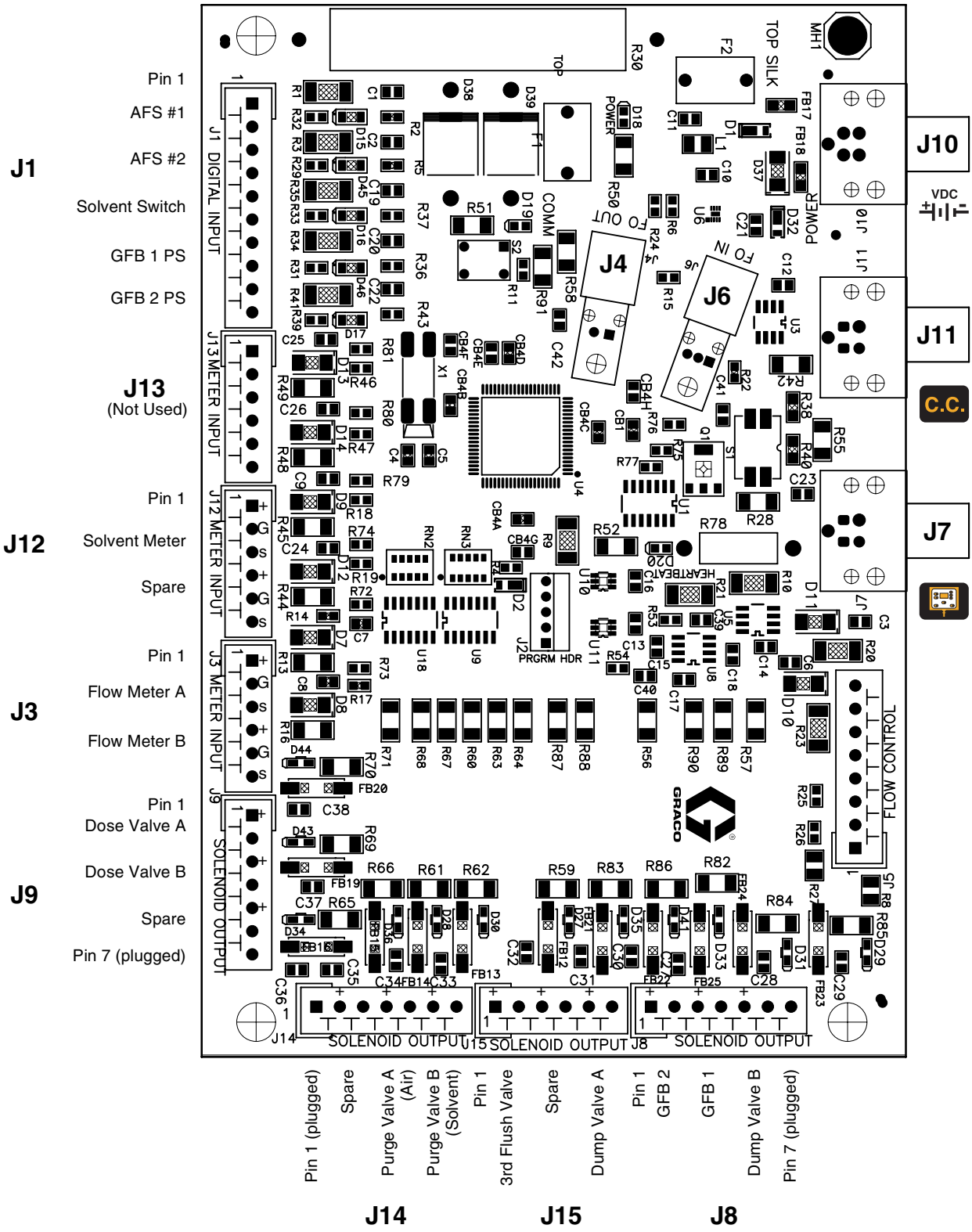


FIG. 9: 255765 Fluid Station Control Board Input/Output Connections

Table 5: Fluid Station Control Board Diagnostics

LED	Connector and Pin Nos.	Signal Description	Diagnosis
D15	J1, 1 & 2	Air Flow Switch 1	Turns on when gun 1 is triggered.
D16	J1, 5 & 6	Solvent Flow Switch	Turns on when solvent is flowing.
D17	J1, 9 & 10	Gun Flush Box 2 Pressure Switch	Turns on when a gun is in Gun Flush Box 2.
D18	J10	Power	Turns on when power is supplied to the board.
D19	n/a	Communication (yellow)	Turns on when board is communicating with EasyKey.
D20	n/a	Board OK	Blinks (heartbeat) during normal operation.
D27	J15, 1 & 2	Purge Valve C (Water Purge)	D27 through D44 turn on when ProMix sends a signal to actuate the related solenoid valve.
D28	J14, 4 & 5	Purge Valve A (Air Purge)	
D29	J8, 5 & 6	Dump Valve B	
D30	J14, 6 & 7	Purge Valve B (Solvent Purge)	
D31	J8, 3 & 4	Gun Flush Box 1 Trigger	
D33	J8, 1 & 2	Gun Flush Box 2 Trigger	
D41	J15, 5 & 6	Dump Valve A	
D43	J9, 3 & 4	Dose Valve B	
D44	J9, 1 & 2	Dose Valve A	
D45	J1, 3 & 4	Air Flow Switch 2	Turns on when gun 2 is triggered.
D46	J1, 7 & 8	Gun Flush Box 1 Pressure Switch	Turns on when a gun is in Gun Flush Box 1.
F1	n/a	Replaceable Fuse for Flow Meter A and B, Dose Valve A and B Solenoids, and Purge Valve A and B Solenoids	Check fuse condition if Flow Meters, Dose Valves, and Purge Valves are not working.
F2	n/a	Replaceable Fuse for Solvent Meter, Dump Valve A and B Solenoids, 3rd Purge Valve Solenoid, and Gun Flush Box 1 and 2 Solenoids	Check fuse condition if Solvent Meter, Dump Valves, 3rd Purge Valve, and Gun Flush Boxes are not working.

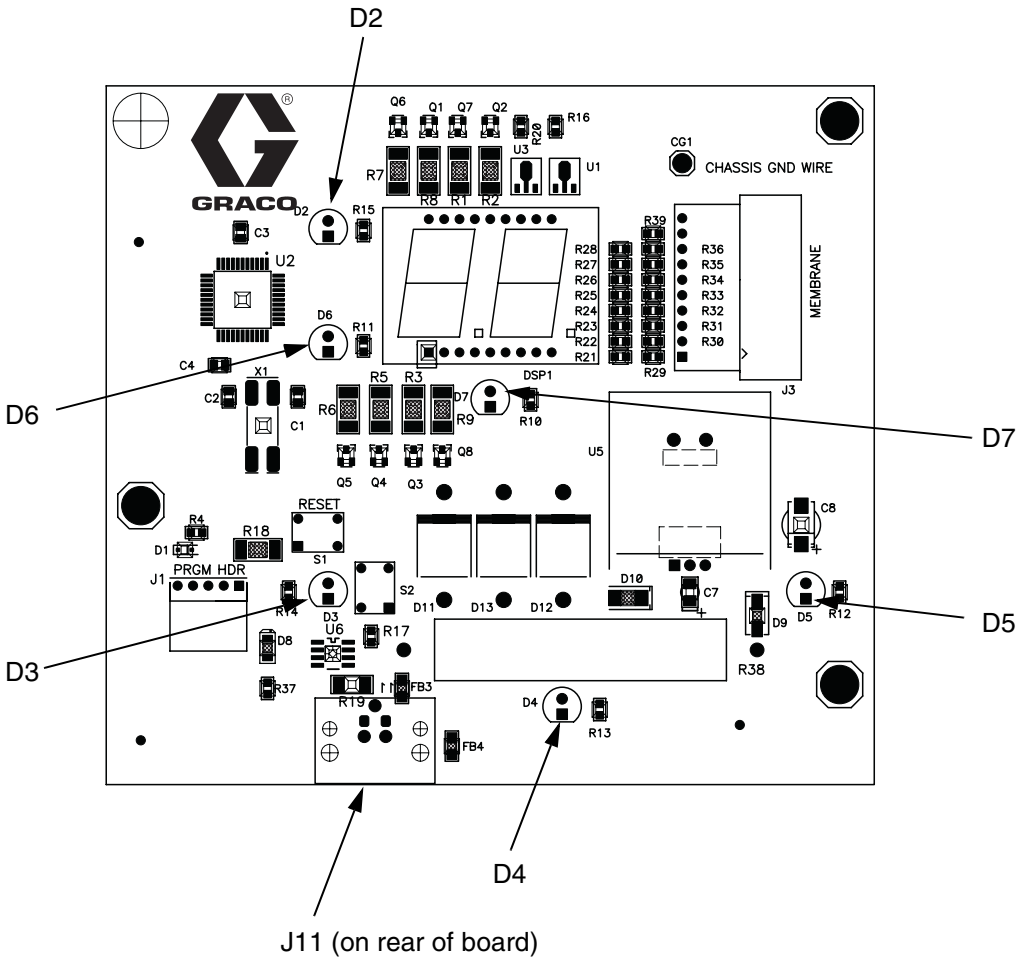
Booth Control Troubleshooting

See FIG. 10 and Table 6 to troubleshoot the booth control board. Also see the **System Electrical Schematic** on pages 32 and 33. The booth control does not contain any servciceable parts and must be replaced as a complete unit.

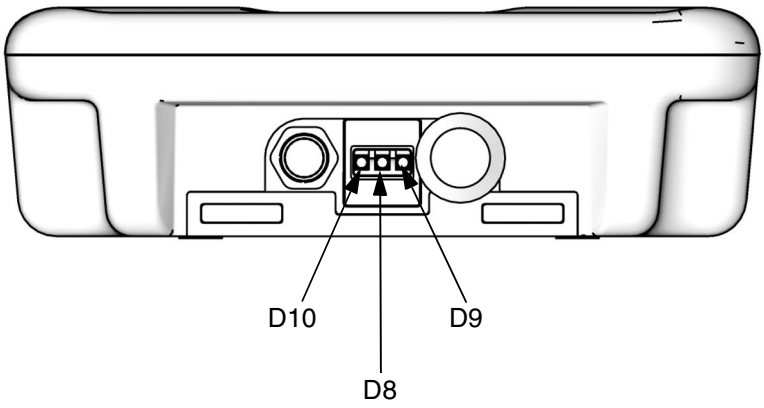
To replace the booth control, disconnect the cable from J7 on the fluid station control board. See FIG. 8 on page 23. Install the new booth control and connect the cable to J7.

Table 6: Booth Control Board Diagnostics

LED	Description	Diagnosis
D2	Alarm Reset Indicator (red)	LED blinks when an alarm occurs and turns off after alarm is reset.
D3	Mix Indicator (green)	LED turns on when in Mix mode.
D4	Standby Indicator (green)	LED turns on when in Standby mode.
D5	Purge Indicator (green)	LED turns on when in Purge mode.
D6	Job Complete Indicator (green)	LED blinks once after key is pressed, signalling that job is complete, and A and B totalizers are reset.
D7	Recipe Indicator (green)	LED turns on when a recipe is in use, and shuts off when a new recipe is being selected or if an alarm occurs. LED blinks when a new recipe is loading and turns solid after loading is complete.
D8	Board OK (green)	Blinks (heartbeat) during normal operation.
D9	Communication (yellow)	Turns on when board is communicating with EasyKey.
D10	Power (green)	Turns on when power is supplied to the board (J11).



Bottom View of Booth Control



TI12789a

FIG. 10: Booth Control Board

Color Change Board Diagnostics

See FIG. 11 and Table 7 to troubleshoot the color change board. Also see the **System Electrical Schematic** on pages 32 and 33. To replace the color change board, see manual 312787.

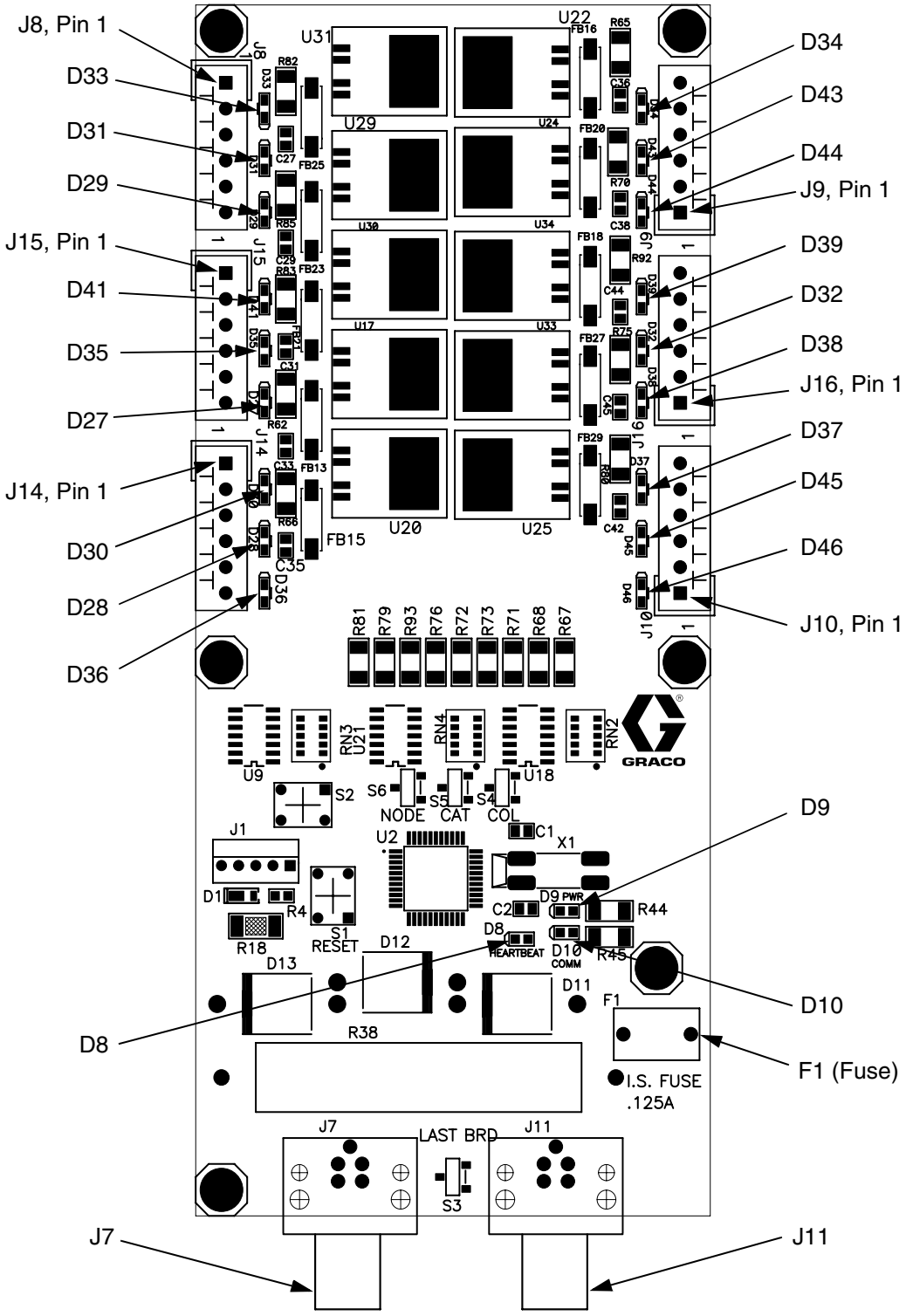


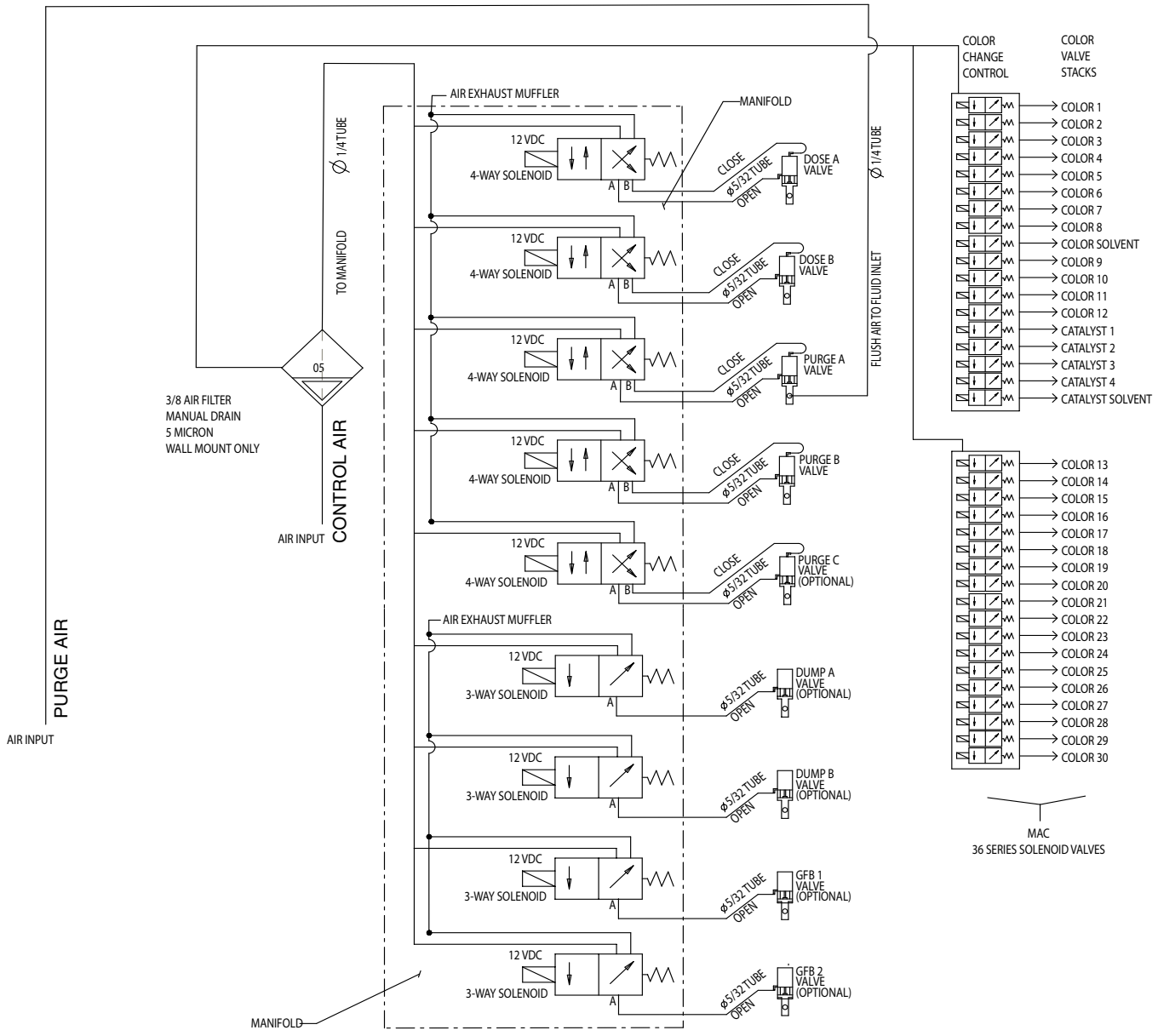
FIG. 11: 256172 Color Change Board

Table 7: Color Change Board Diagnostics

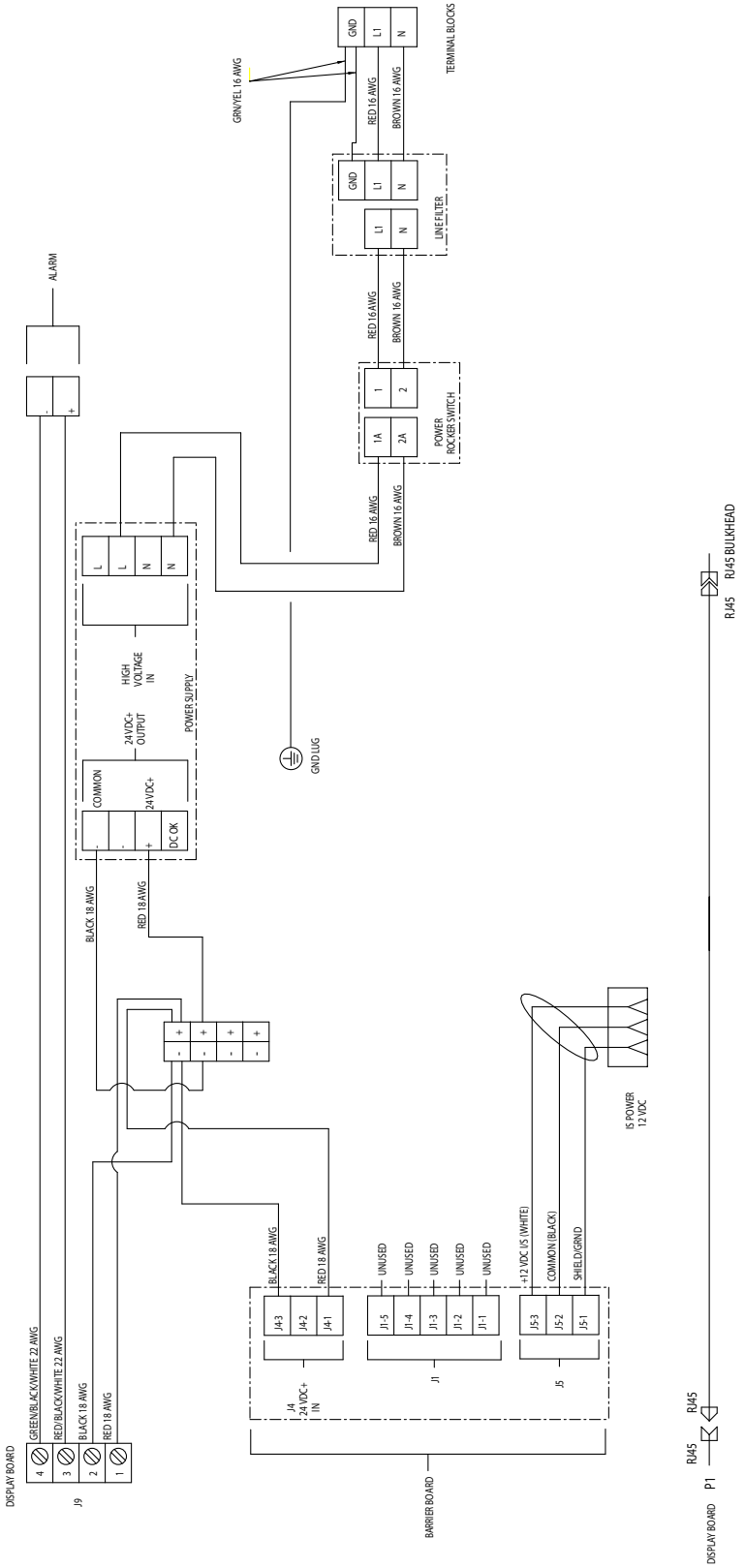
LED	Connector and Pin Nos.	Board 1 Signal Description	Board 2 Signal Description	Diagnosis
D8	n/a	Board OK	Board OK	Blinks (heartbeat) during normal operation.
D9	n/a	Communication (yellow)	Communication (yellow)	Turns on when board is communicating with ProMix 2KS.
D10	J7	Power	Power	Turns on when power is supplied to the board.
D27	J15, 5 & 6	Color 3	Color 16	D27 through D46 turn on when ProMix 2KS sends a signal to actuate the related solenoid valve.
D28	J14, 3 & 4	Color 1	Color 14	
D29	J8, 5 & 6	Color 6	Color 19	
D30	J14, 1 & 2	Color 2	Color 15	
D31	J8, 3 & 4	Color 7	Color 20	
D32	J16, 3 & 4	Catalyst 4	Color 26	
D33	J8, 1 & 2	Color 8	Color 21	
D34	J9, 5 & 6	Color 9	Color 22	
D35	J15, 3 & 4	Color 4	Color 17	
D36	J14, 5 & 6	Solvent (Color)	Color 13	
D37	J10, 5 & 6	Catalyst 2	Color 28	
D38	J16, 1 & 2	Catalyst 3	Color 27	
D39	J16, 5 & 6	Color 12	Color 25	
D41	J15, 1 & 2	Color 5	Color 18	
D43	J9, 3 & 4	Color 10	Color 23	
D44	J9, 1 & 2	Color 11	Color 24	
D45	J10, 3 & 4	Catalyst 1	Color 29	
D46	J10, 1 & 2	Solvent (Catalyst)	Color 30	
F1	Replaceable Fuse	n/a	n/a	Check fuse condition if there is no power to the board or if communication is interrupted between the fluid station and the color change module.

Schematic Diagrams

System Pneumatic Schematic



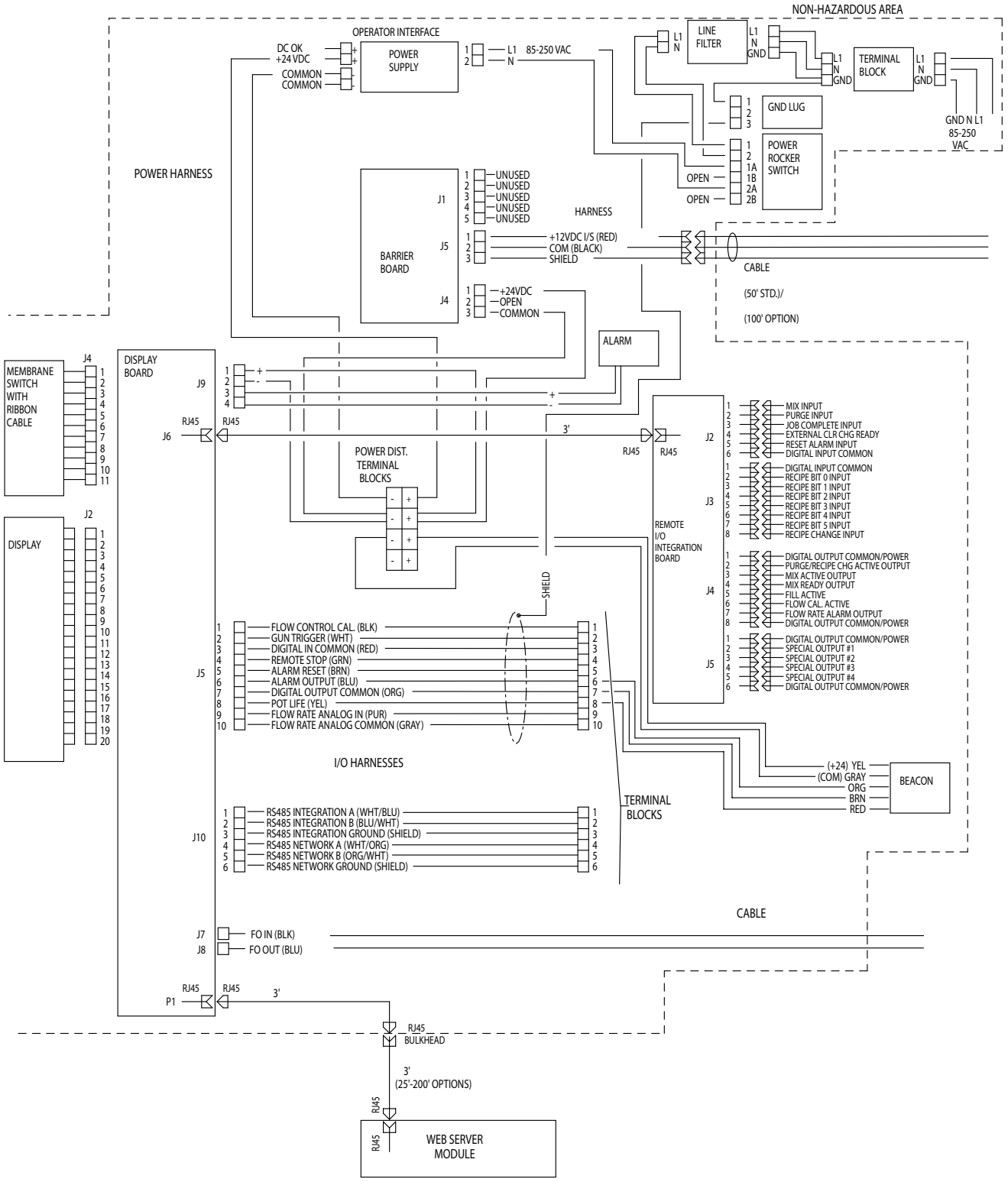
EasyKey Electrical Schematic



System Electrical Schematic

NOTE: The electrical schematic illustrates all possible wiring expansions in a ProMix 2KS system. Some components shown are not included with all systems.

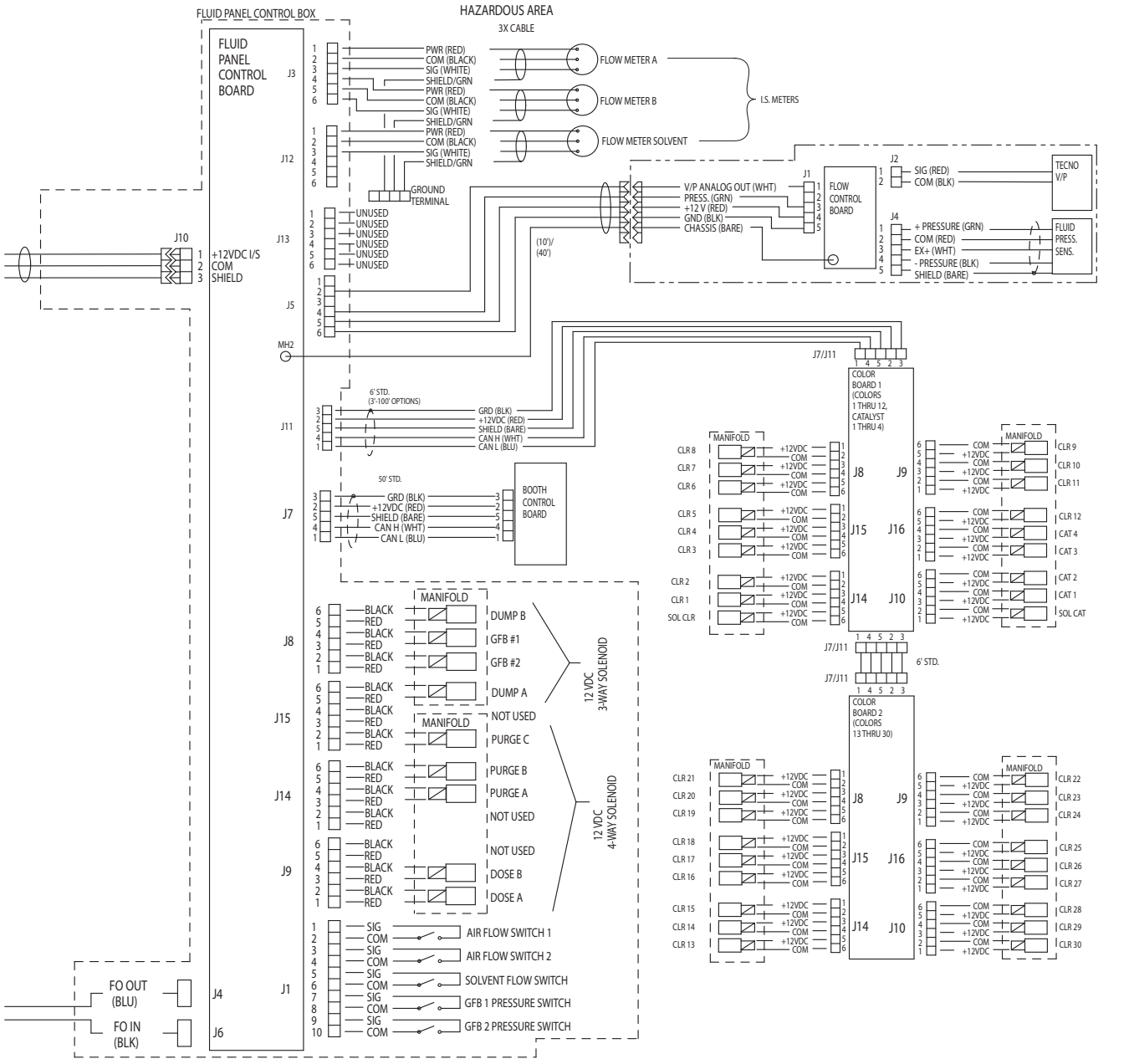
Non-Hazardous Area



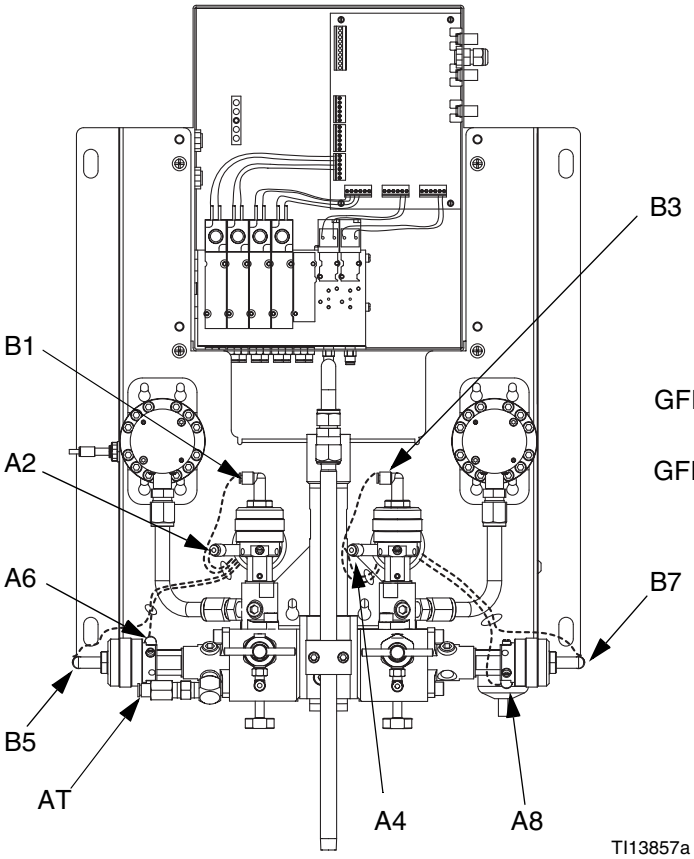
System Electrical Schematic

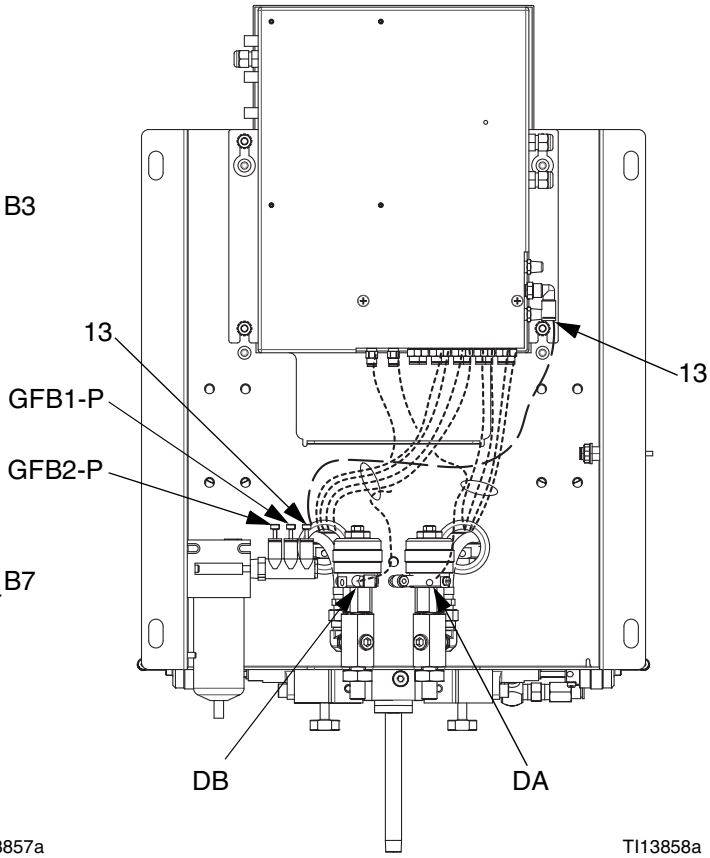
NOTE: The electrical schematic illustrates all possible wiring expansions in a ProMix 2KS system. Some components shown are not included with all systems.

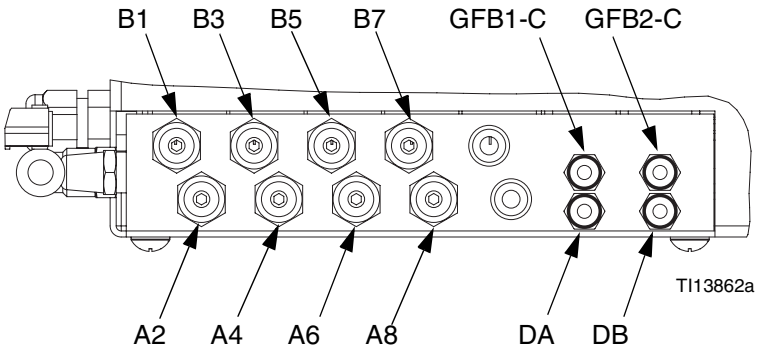
Hazardous Area

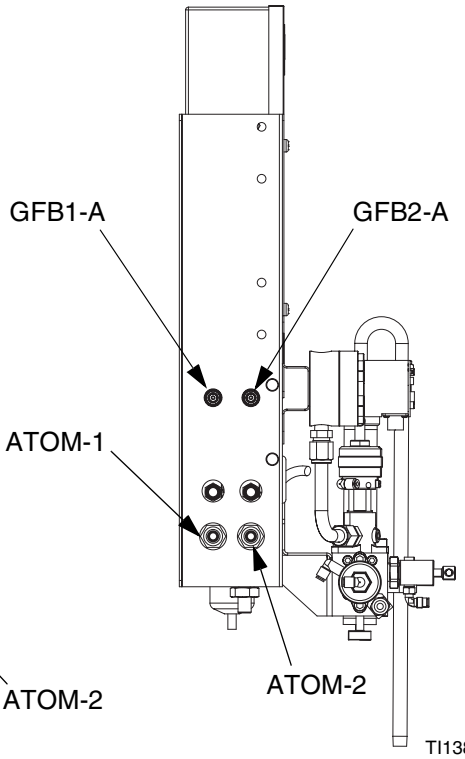


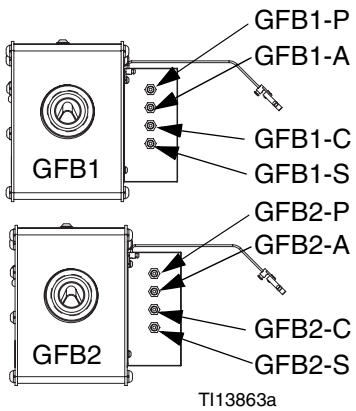
Tubing Schematic











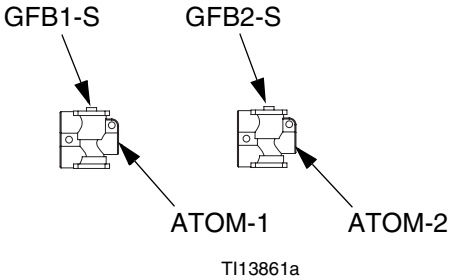


Table 8: Tubing Chart

Color	Description	Starting Point	Ending Point	Tube OD in. (mm)	Tube Ref. No.
Green	Dose A On	A2	A2	5/32 (4)	336
Green	Dose B On	A4	A4	5/32 (4)	336
Green	Purge A On	A6	A6	5/32 (4)	336
Green	Purge B On	A8	A8	5/32 (4)	336
Green	Dump A	DA	DA	5/32 (4)	Included in optional Dump Valve Kit 15V821
Green	Dump B	DB	DB	5/32 (4)	
Red	Dose A Off	B1	B1	5/32 (4)	337
Red	Dose B Off	B3	B3	5/32 (4)	337
Red	Purge A Off	B5	B5	5/32 (4)	337
Red	Purge B Off	B7	B7	5/32 (4)	337
Natural	Solenoid Air Supply	13	13	1/4 (6)	334
Natural	Gun Flush Box 1 Pressure Switch Signal	GFB1-A	GFB1-A	5/32 (4)	Included in optional Gun Flush Box Kit 15V826
Natural	Gun Flush Box 2 Pressure Switch Air	GFB2-A	GFB2-A	5/32 (4)	
Natural	Gun Flush Box 1 Trigger Air	GFB1-C	GFB1-C	5/32 (4)	
Natural	Gun Flush Box 2 Trigger Air	GFB2-C	GFB2-C	5/32 (4)	
Natural	Gun Flush Box 1 Supply Air	GFB1-P	GFB1-P	5/32 (4)	
Natural	Gun Flush Box 2 Supply Air	GFB2-P	GFB2-P	5/32 (4)	
Natural	Gun Flush Box 1 Safety Interlock	GFB1-S	GFB1-S	5/32 (4)	
Natural	Gun Flush Box 2 Safety Interlock	GFB2-S	GFB2-S	5/32 (4)	
Natural	Gun 1 Atomizing Air	ATOM-1	ATOM-1	1/4 (6)	User supplied. Connects air flow switch to gun air shutoff valve.
Natural	Gun 2 Atomizing Air	ATOM-2	ATOM-2	1/4 (6)	
Natural	Purge Air Supply	Use as a separate line connected directly to the main shop air line. Do not connect to the unit's main air supply or to the air manifold (335).	AT	1/4 (6)	338

Service

Before Servicing

- To avoid electric shock, turn off EasyKey power before servicing.
- Servicing EasyKey exposes you to high voltage. Shut off power at main circuit breaker before opening enclosure.
- All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations.
- Do not substitute or modify system components as this may impair intrinsic safety.
- Read **Warnings**, page 8.

NOTICE

To avoid damaging circuit board when servicing, wear Part No. 112190 grounding strap on wrist and ground appropriately.

1. Flush system and follow **Pressure Relief Procedure**, page 11, if service time may exceed pot life time and before servicing fluid components.
2. Close main air shutoff valve on air supply line and on ProMix 2KS.
3. Shut off ProMix 2KS power (0 position). FIG. 12.
4. If servicing EasyKey Display, also shut off power at main circuit breaker.

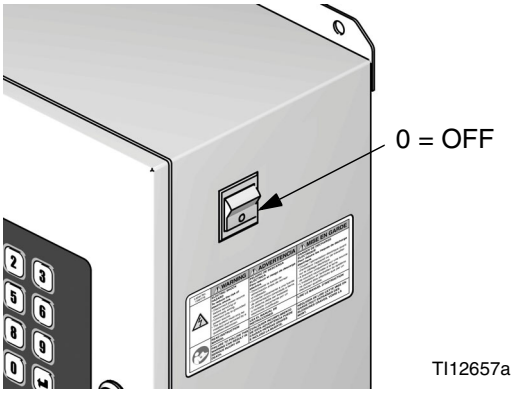


FIG. 12: Power Off

After Servicing

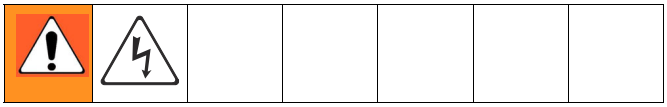
After servicing the system, be sure to follow the **Start Up** checklist and procedure in the ProMix 2KS Operation manual.

Servicing EasyKey

Updating Software

To update software, upload new software from your PC using the basic web interface. See manual 313386.

Replacing Display Board or Graphic Display



NOTICE

To avoid damaging circuit board when servicing, wear Part No. 112190 grounding strap on wrist and ground appropriately.

1. Follow **Before Servicing**, page 36.
2. Unlock and open EasyKey door with its key.
3. Note position of all external connections (J4, J5, J6, J7, J8, J9, J10) to display board, then unplug the connectors. See FIG. 7 on page 20.
4. Remove 4 screws (210e) and the display board assembly (210b, 210c). FIG. 13.

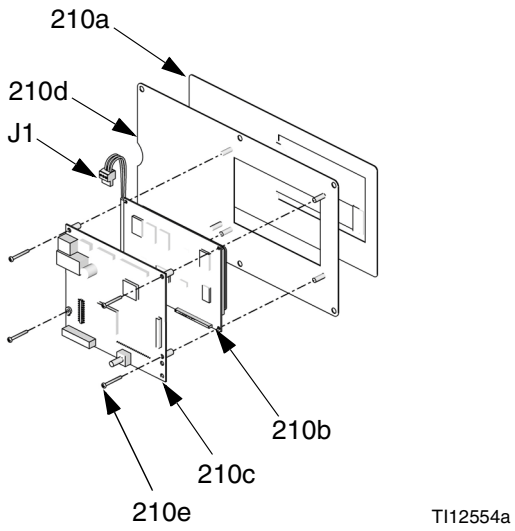
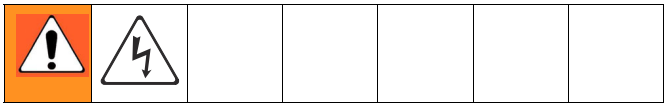


FIG. 13: Display Interface

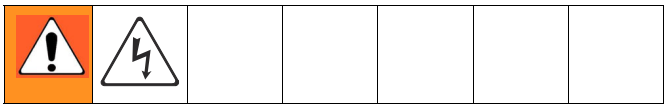
5. Disconnect graphic display power cable (J1) from the display board (210c).
6. Separate graphic display (210b) from display board (210c) [connector J2 on back of board].
7. To assemble the new parts, align connector J2 on the display board (210c) with the socket on the graphic display (210b). Press them together. See FIG. 13.
8. Reconnect the graphic display power cable (J1) to the display board (210c).
9. Mount display board assembly with screws (210e).
10. Plug all connectors into display board (210c). FIG. 13. Confirm that the cables do not pinch when opening or closing the door.
11. Locate the battery on the board (see FIG. 7 on page 20). Pull the strip to remove the protective isolator and activate the battery.
12. Close and lock EasyKey door with key.
13. Turn EasyKey power on to test display board.

Replacing Power Supply



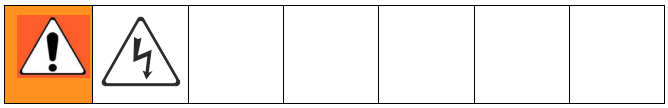
1. Follow **Before Servicing**, page 36.
2. Unlock and open EasyKey door with its key.
3. Note position of power supply input and output wires. See **EasyKey Electrical Schematic**, page 31. Disconnect wires from power supply (214f). See FIG. 14.
4. Remove power supply from din rail.
5. Install new power supply (214f). Reconnect input and output wires in positions noted in step 3.
6. Close and lock EasyKey door with key.
7. Turn on power at main circuit breaker.
8. Turn EasyKey power on to test operation.

Replacing Line Filter



1. Follow **Before Servicing**, page 36.
2. Unlock and open EasyKey door with its key.
3. Note position of line filter input and output wires. See **EasyKey Electrical Schematic**, page 31. Disconnect wires and remove line filter (214l) from bracket (214m). See FIG. 14.
4. Install new line filter (214l). Reconnect wires in positions noted in step 3.
5. Close and lock EasyKey door with key.
6. Turn on power at main circuit breaker.
7. Turn EasyKey power on to test operation.

Replacing Power Switch



1. Follow **Before Servicing**, page 36.
2. Unlock and open EasyKey door with its key.
3. Note position of power switch wires. See **EasyKey Electrical Schematic**, page 31. Disconnect wires and remove switch (202, FIG. 14).
4. Install new power switch (202). Reconnect wires in positions noted in step 3.
5. Close and lock EasyKey door with key.
6. Turn on power at main circuit breaker.
7. Turn EasyKey power on to test operation.

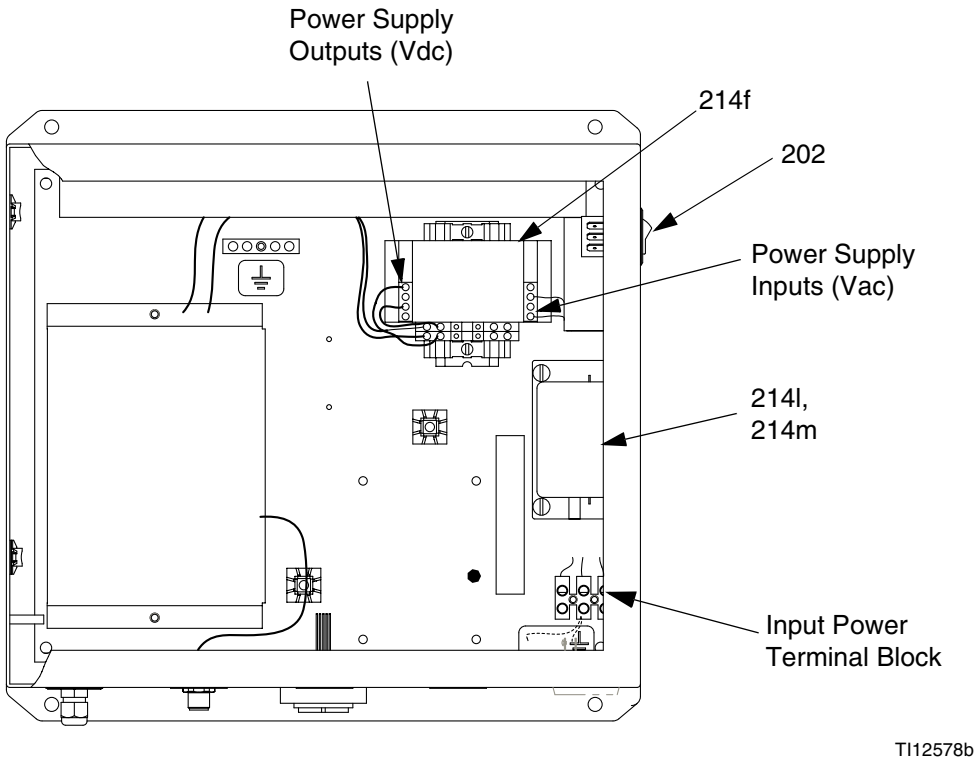


FIG. 14: Power Supply

Replacing Barrier Board

NOTICE

To avoid damaging circuit board when servicing, wear Part No. 112190 grounding strap on wrist and ground appropriately.

1. Follow **Before Servicing**, page 36.
2. Unlock and open EasyKey door with its key.
3. Disconnect the cables and connectors from J1, J4, and J5. FIG. 16.
4. Using the security tool provided (Part No. 122239), remove 2 screws (214k) and the cover (214b). See FIG. 15.
5. Noting their location, remove 5 screws (214g, 214h) from the barrier board (214a). Do not remove the screw noted in FIG. 16. Remove board.
6. Apply thermal compound to the heatsink (Z) on the back of the new barrier board (214a). See FIG. 16.
7. Install the new barrier board with the 5 screws (214g, 214h).
8. Install the cover (214b) with 2 screws (214k), using the security tool.
9. Connect cables to J1, J4, and J5.
10. Close and lock EasyKey door with key.
11. Turn on power at main circuit breaker.
12. Turn EasyKey power on to test operation.

Replacing Barrier Board Fuses

Fuse	Part No.	Description
F1, F2	114788	Power In Fuses; 2 amp, time lag
F3, F4	15D979	Power Out Fuses; 0.4 amp, quick acting

1. Follow **Replacing Barrier Board**, steps 1-4.
2. Remove the fuse (F1, F2, F3, or F4) from its fuse holder. FIG. 16.
3. Snap new fuse into holder.
4. Follow **Replacing Barrier Board**, steps 8-12.

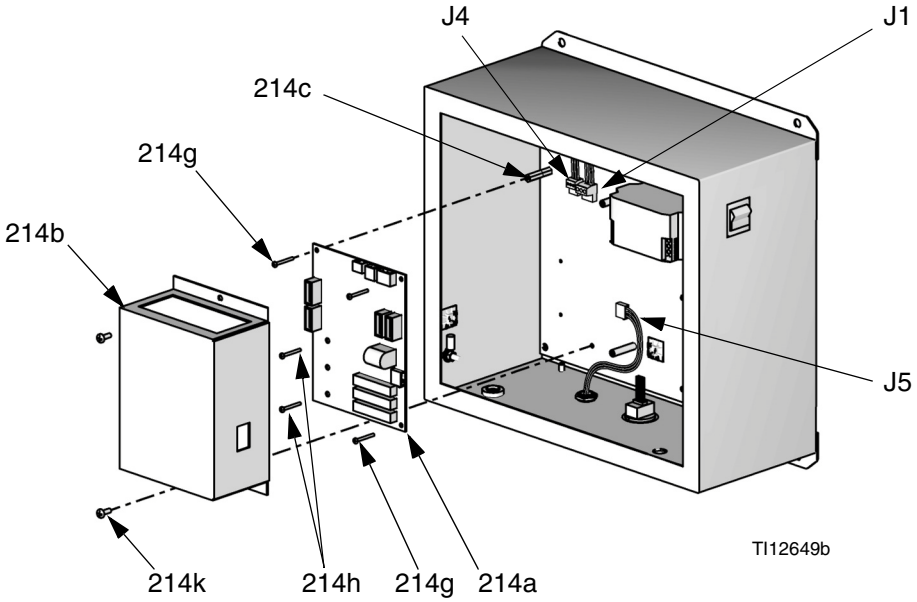
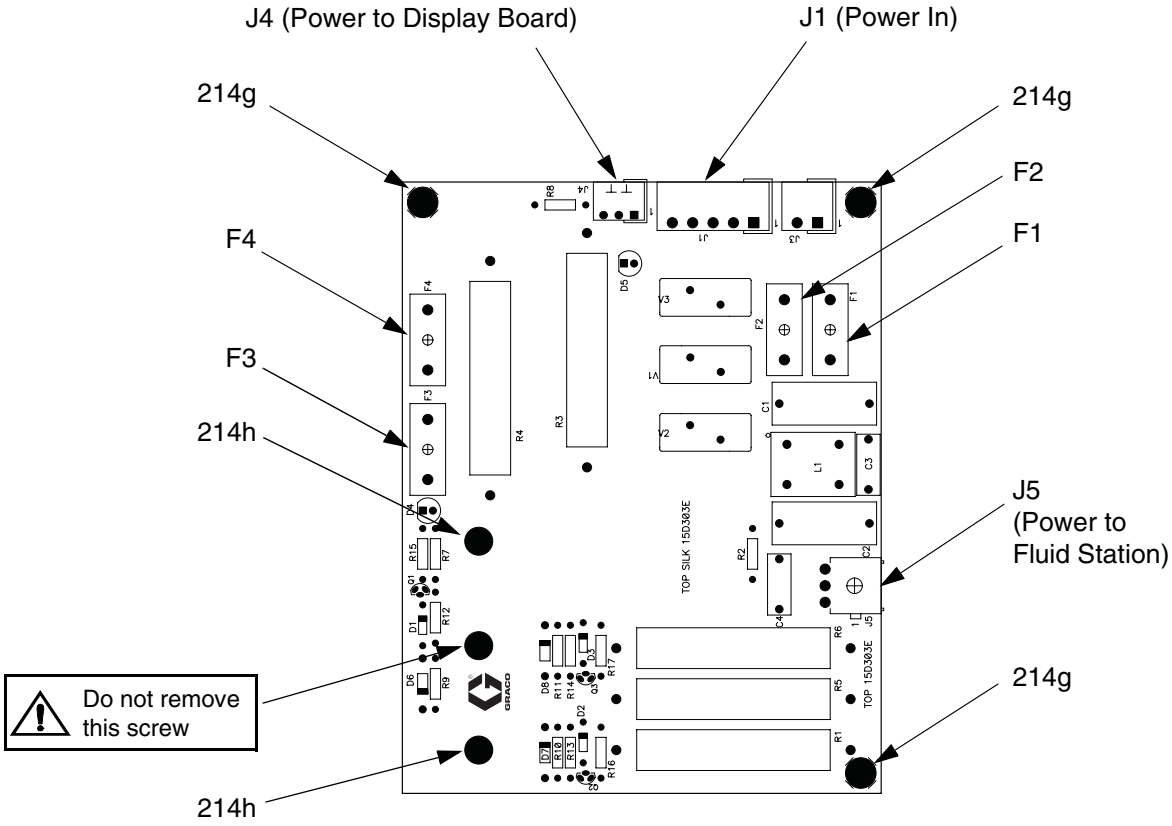
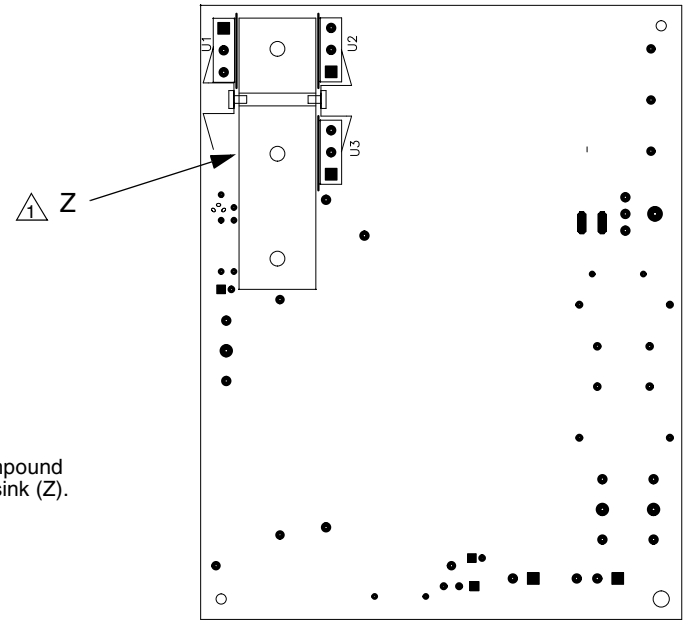


FIG. 15: Replacing Barrier Board



Front of Barrier Board, showing Fuses and Connectors

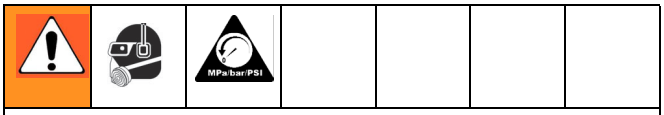


1 Apply thermal compound to surface of heatsink (Z).

Back of Barrier Board, showing Heatsink (Z)

FIG. 16: Barrier Board Connectors and Fuses

Replacing Air Filter Element



Removing a pressurized air filter bowl could cause serious injury. Depressurize air line before servicing.

Check the 5 micron air manifold filter daily and replace element (317a, Part No. 114228) as needed.

1. Close main air shutoff valve on air supply line and on unit. Depressurize air line.
2. Remove filter cover (A). See FIG. 17.
3. Unscrew filter bowl (B).
4. Remove and replace element (317a).
5. Screw filter bowl (B) on securely. Install cover (A).

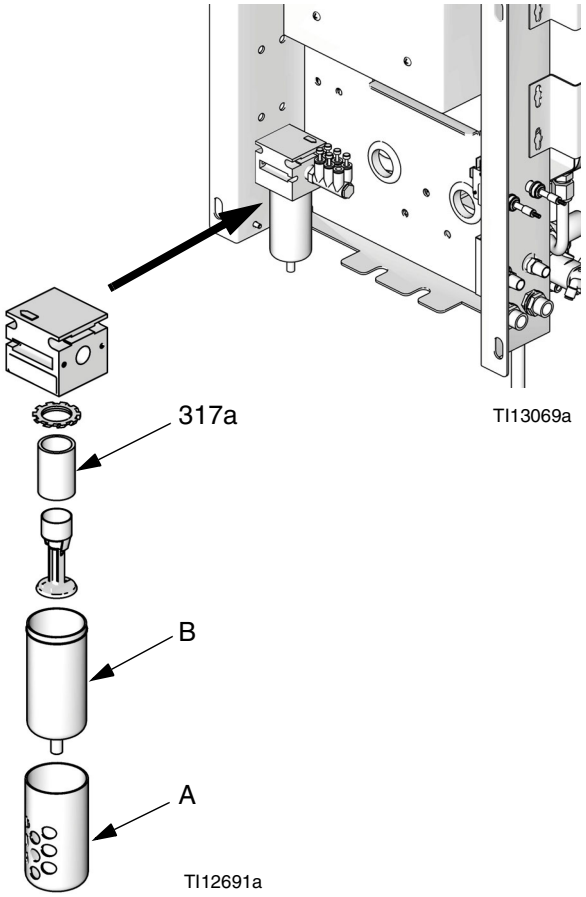
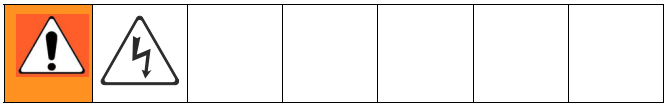


FIG. 17: Replacing Air Filter Element

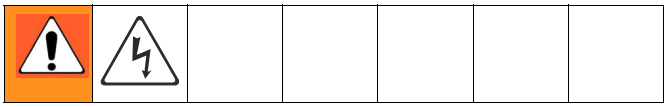
Wall Mount Fluid Station

Preparation

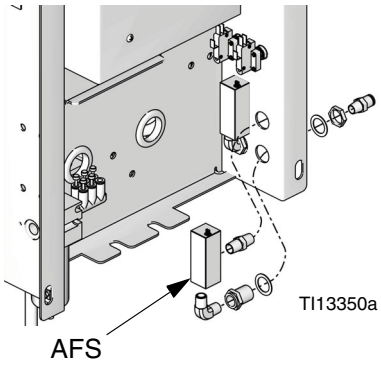


1. Follow **Before Servicing**, page 36.
2. Loosen the 4 screws (307), then remove the Wall Mount Fluid Station cover (322). FIG. 20.

Servicing Air Flow Switch



1. Follow **Preparation**, above.
2. See FIG. 18. Disconnect the air flow switch (AFS) wires from J1 pins 1-4 on the Control Board. Disconnect the air lines. Remove the air flow switch and hardware from the side of the fluid station.
3. Install a new air flow switch. Connect the wires to J1 pins 1-4. Reconnect the air lines.



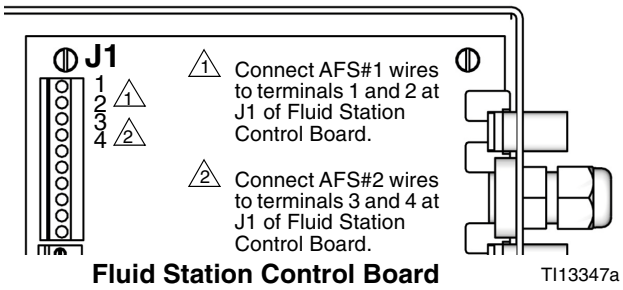
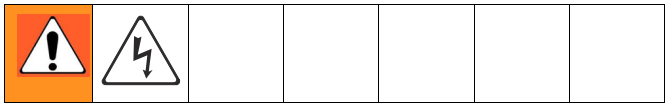
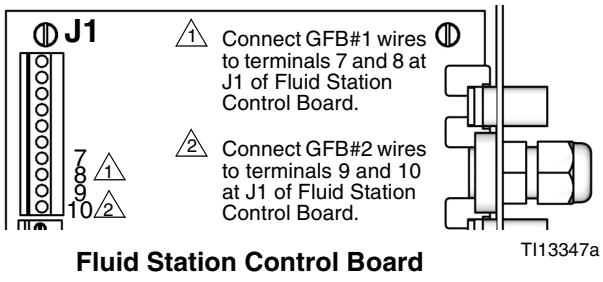


FIG. 18: Servicing Air Flow Switch

Servicing GFB Pressure Switch



1. Follow **Preparation**, page 42.
2. See FIG. 19. Disconnect the GFB pressure switch (PS) wires from J1 pins 7-10 on the Control Board. Disconnect the air line. Remove the switch and hardware from the side of the fluid station.
3. Install a new GFB pressure switch. Connect the wires to J1 pins 7-10. Reconnect the air line.
4. To repair the gun flush box, see manual 312784.



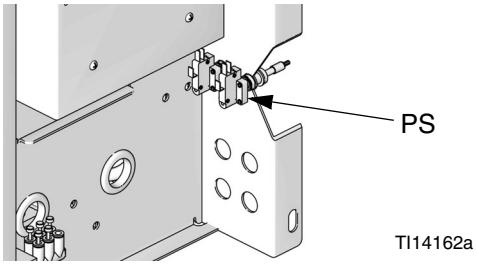
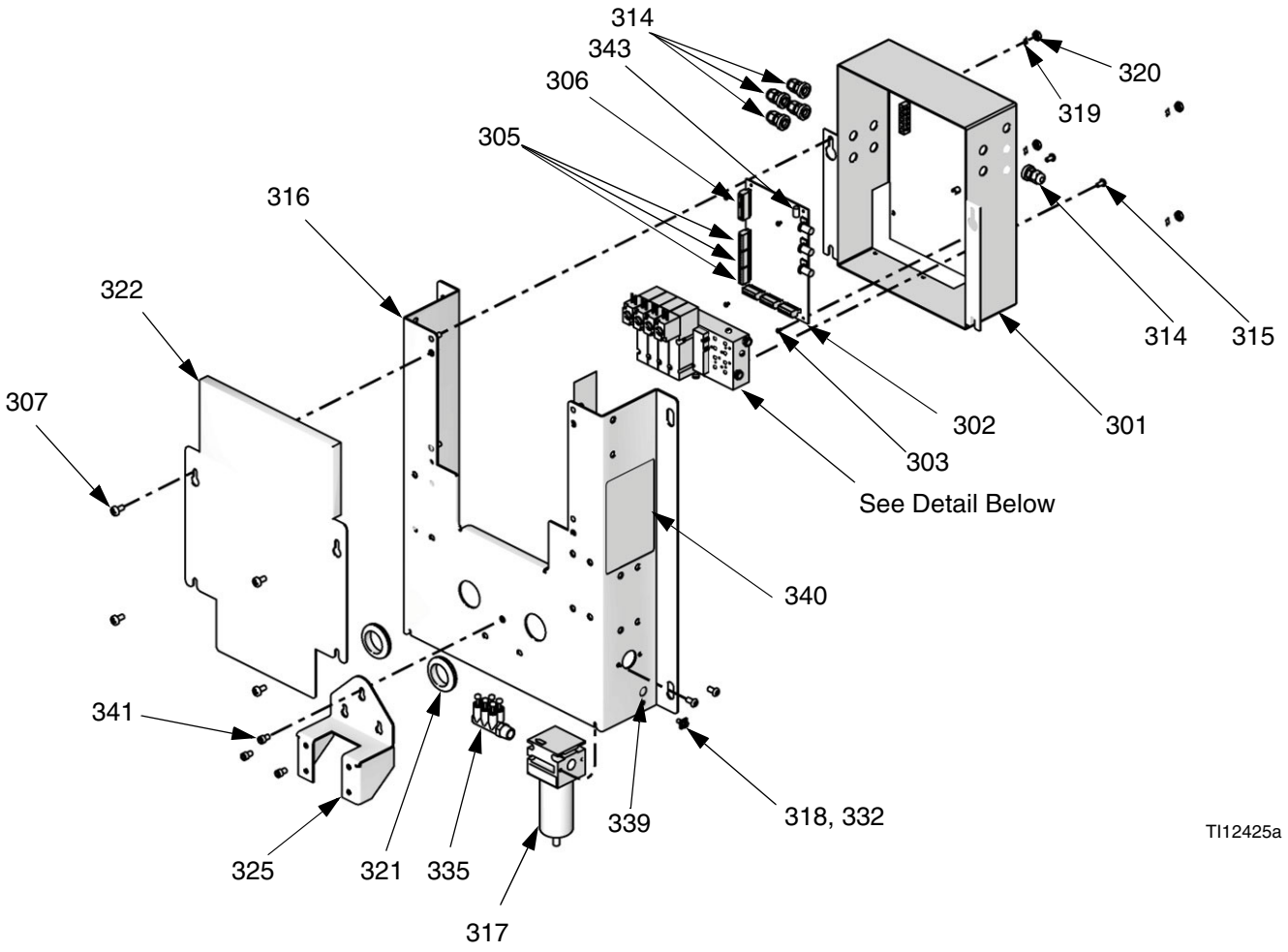


FIG. 19: Servicing GFB Pressure Switch



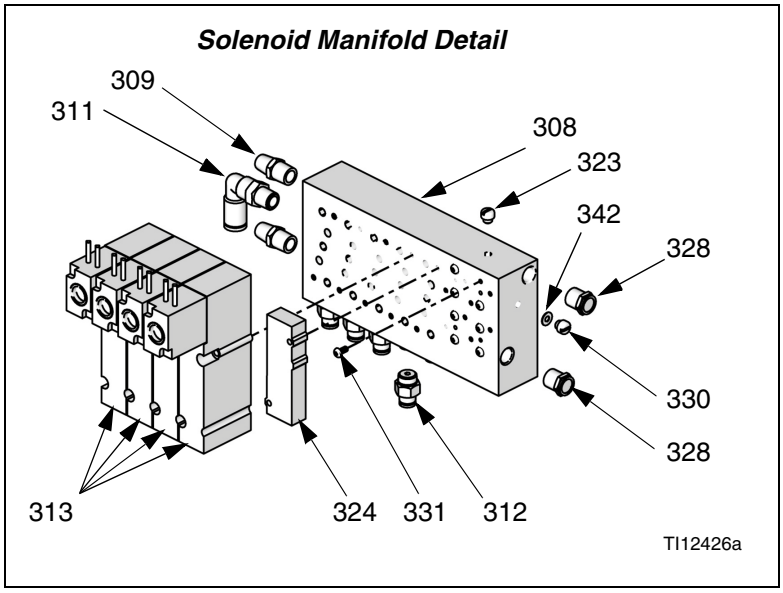


FIG. 20: Wall Mount Fluid Station

Replacing Control Board

NOTICE

To avoid damaging circuit board when servicing, wear Part No. 112190 grounding strap on wrist and ground appropriately.

1. Follow **Preparation**, page 42.
2. Disconnect fiber optic wires (J4, J6) and all cables (J1, J3, J5, J7, J8, J9, J12, J13, J14, J15) from control board (302). FIG. 21.
3. Remove 4 screws (303). Remove connector jam nuts on the outside of the enclosure (301). Remove control board (302). FIG. 20.
4. Install new control board (302) with 4 screws (303).
5. Connect cables to control board (302). FIG. 21. Insert fiber optic cable connectors into board connectors (J4, J6), matching blue with blue, black with black, and hand-tighten connectors. Do not pinch or kink the fiber optic cables; the cables require a 2 in. (51 mm) bend radius.
6. Replace the cover (322).
7. Turn EasyKey power on to test operation.

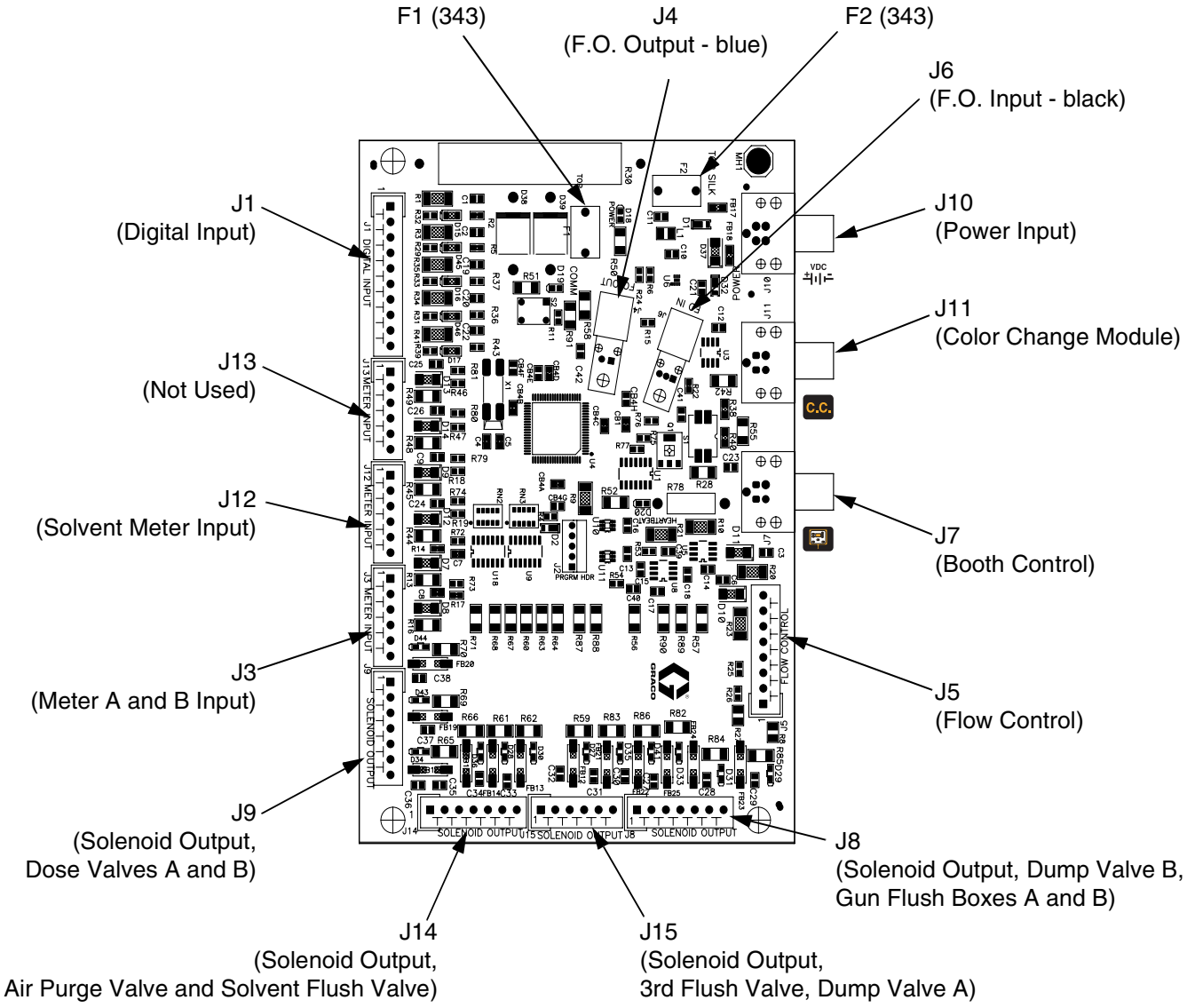


FIG. 21: 255765 Fluid Station Control Board

Replacing Solenoids

The Wall Mount Fluid Station has a minimum of 4 solenoids. If you have options installed, you have additional (optional) solenoids for each. See Table 9 and **Schematic Diagrams**, page 30.

To replace a single solenoid:

1. Follow **Preparation**, page 42, and shut off power at main circuit breaker.
2. Disconnect 2 solenoid wires (N) from control board (302). See FIG. 22 and **System Electrical Schematic**, page 33.
3. Unscrew 2 screws (P) and remove solenoid (313).
4. Install new solenoid (313).
5. Connect 2 wires (N) to control board (302). Solenoid wires are polarized (red +, black –). Refer to **System Electrical Schematic**, page 33.
6. Replace the cover (322).

Replacing Control Board Fuses

Replacing a fuse (F1 or F2) with a non-Graco fuse voids the IS system safety approval.

Fuse	Part No.	Description
F1, F2	123690	Fuse; 125 mA, intrinsically safe

1. Follow **Preparation**, page 42.
2. Locate fuse F1 or F2 on the control board. See FIG. 22. Remove the screw and metal strap.
3. Pull the fuse away from the board.
4. Install the new fuse (343).
5. Replace the cover (322).

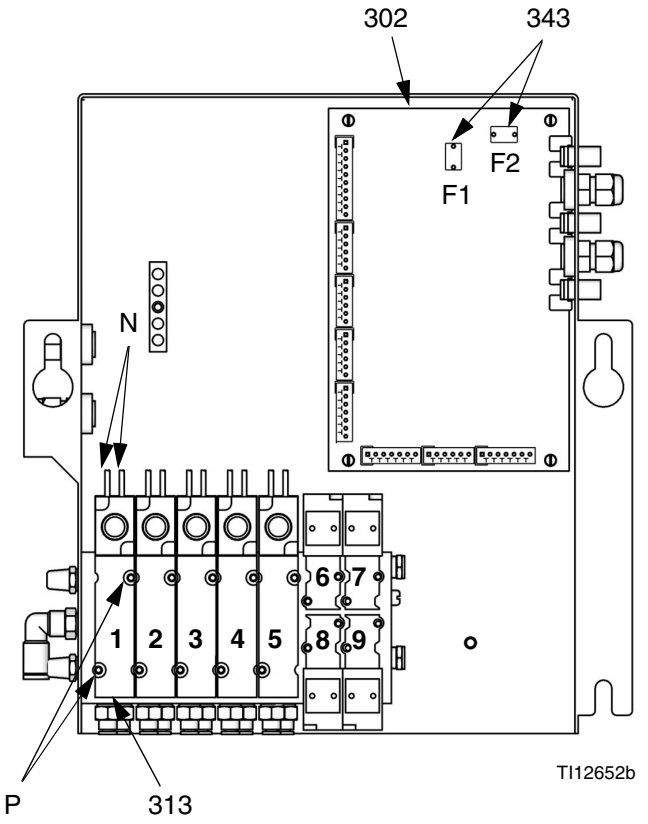


FIG. 22: Replacing Solenoids and Fuse

Table 9: Wall Panel Solenoids

Solenoid	Actuates	Fuse
Standard		
1	Dose Valve A	F1
2	Dose Valve B	F1
3	Air Purge Valve	F1
4	Solvent Purge Valve	F1
Optional		
5	Third Flush Valve	F2
6	Dump Valve A	F2
7	Dump Valve B	F2
8	Gun Flush Box 1	F2
9	Gun Flush Box 2	F2

Servicing Flow Meters

Coriolis Meter

1. Follow **Before Servicing**, page 36.
2. To remove and service the Coriolis meter, see manual 313599.

G3000 or G3000HR Meter

Removal

1. Follow **Before Servicing**, page 36.
2. Unscrew cable connector (CC) from meter (M). FIG. 23.
3. Unscrew four 1/4-20 screws (MS) holding the meter mounting plate (MP). FIG. 23.
4. Unscrew fluid line from meter inlet (P).
5. Unscrew meter (M) from dose valve connector (H). FIG. 23.
6. Service meter as instructed in the meter manual 308778.

Installation

1. Screw meter (M) securely onto the dose valve connector (H), using a wrench.

NOTE: To avoid leakage, secure the meter (M) to the dose valve connector (H) before connecting it to the fluid station.

2. Secure meter (M) and plate (MP) to fluid station with screws (MS).

NOTE: You must assemble the meter sensor to the meter body before connecting the cable to the sensor for the meter to function properly.

3. Connect meter cable (CC). See FIG. 23.
4. Connect fluid line (P).
5. Calibrate meter as instructed in ProMix Operation manual.

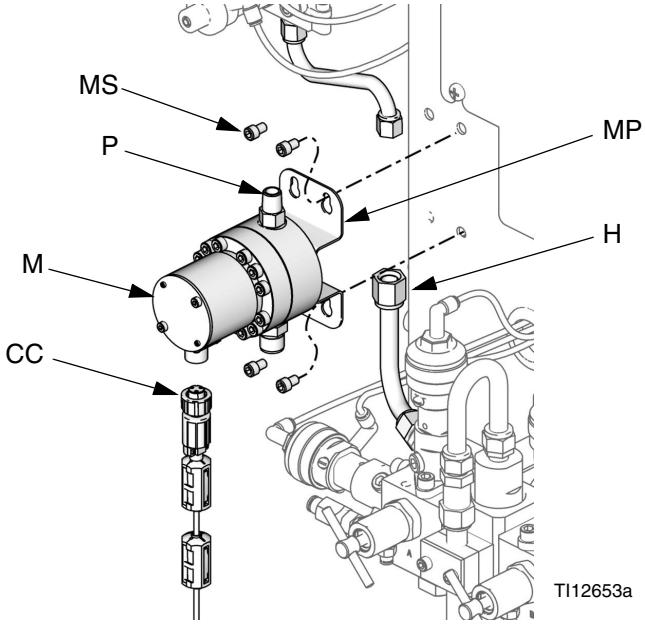
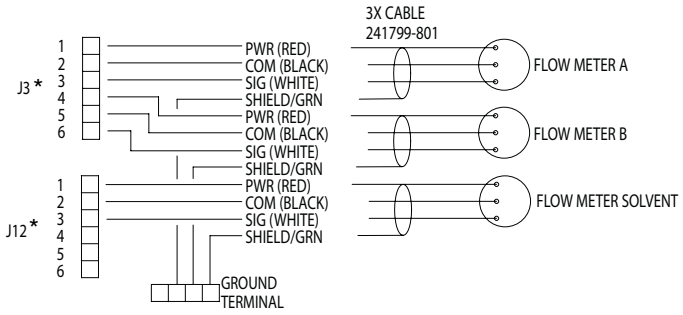


FIG. 23: G3000/G3000HR Flow Meters

Cable	Length
241799	5 ft (1.52 m)
241800	16 in. (406 mm)
241801	13 in. (330 mm)



*Connectors on Fluid Station Control Board

FIG. 24: Meter Cable Schematic

Servicing Fluid Manifold

Removal

1. Follow **Servicing Flow Meters, Removal** steps 1-5, page 46.
2. Disconnect air and fluid lines from the manifold (4).
3. Holding onto the fluid manifold (4), loosen the three screws (341) holding the bracket (325) to the fluid station. Lift the fluid manifold (4) and pull it away from the panel. Service as instructed in the Fluid Mix Manifold manual 312781.

Installation

1. Secure the fluid manifold (4) and mounting plate (325) with three screws (341).
2. Install meters. See **Installation** steps 1-3, page 46.
3. Connect air and fluid lines.
4. Calibrate meters as instructed in ProMix Operation manual.

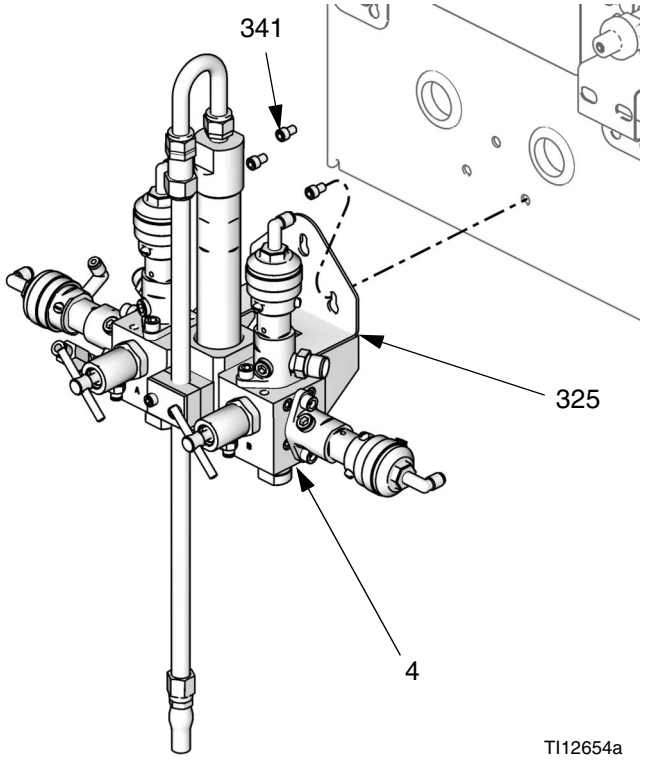


FIG. 25: Fluid Manifold

Servicing Color Change Module, Color/Catalyst Valves, and Dump Valves

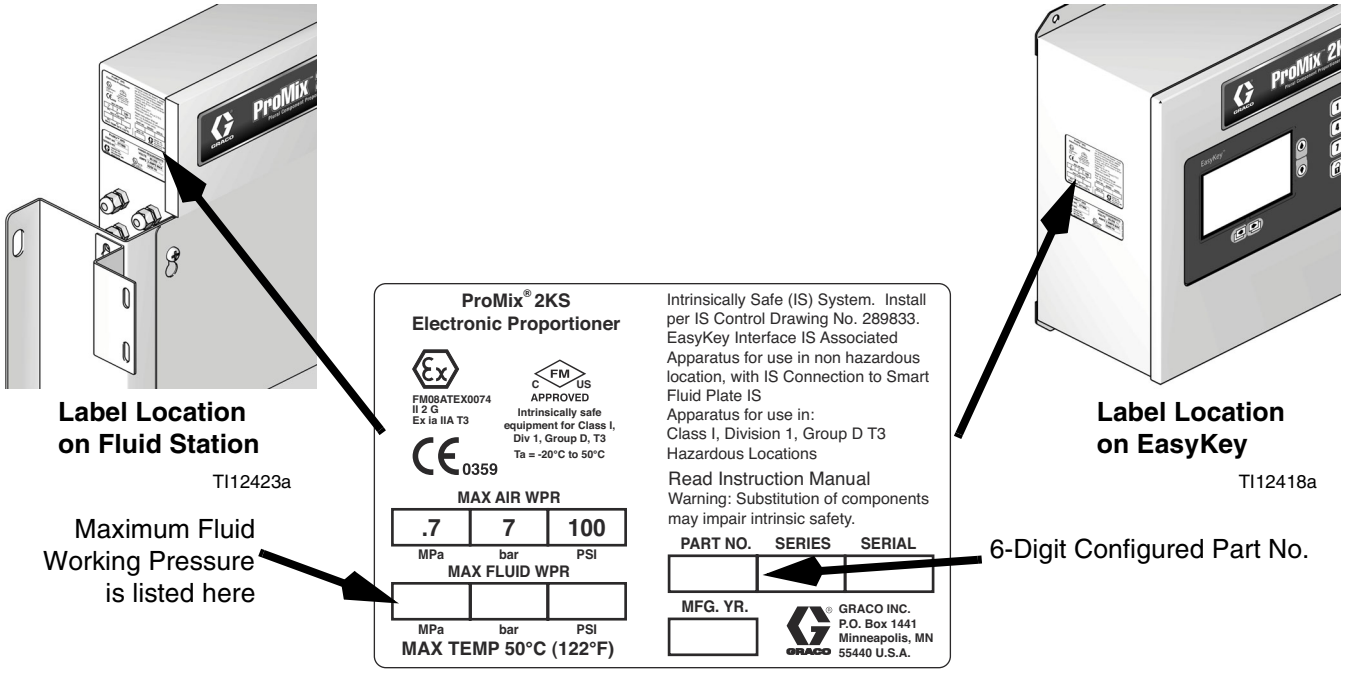
1. Follow **Before Servicing**, page 36.
2. See manual 312787 for the color change module.
3. See manual 312783 for the color/catalyst valve stacks.
4. See manual 312786 for the dump valve kits.
5. See manual 312782 to service an individual valve.

Parts

Configurator Key

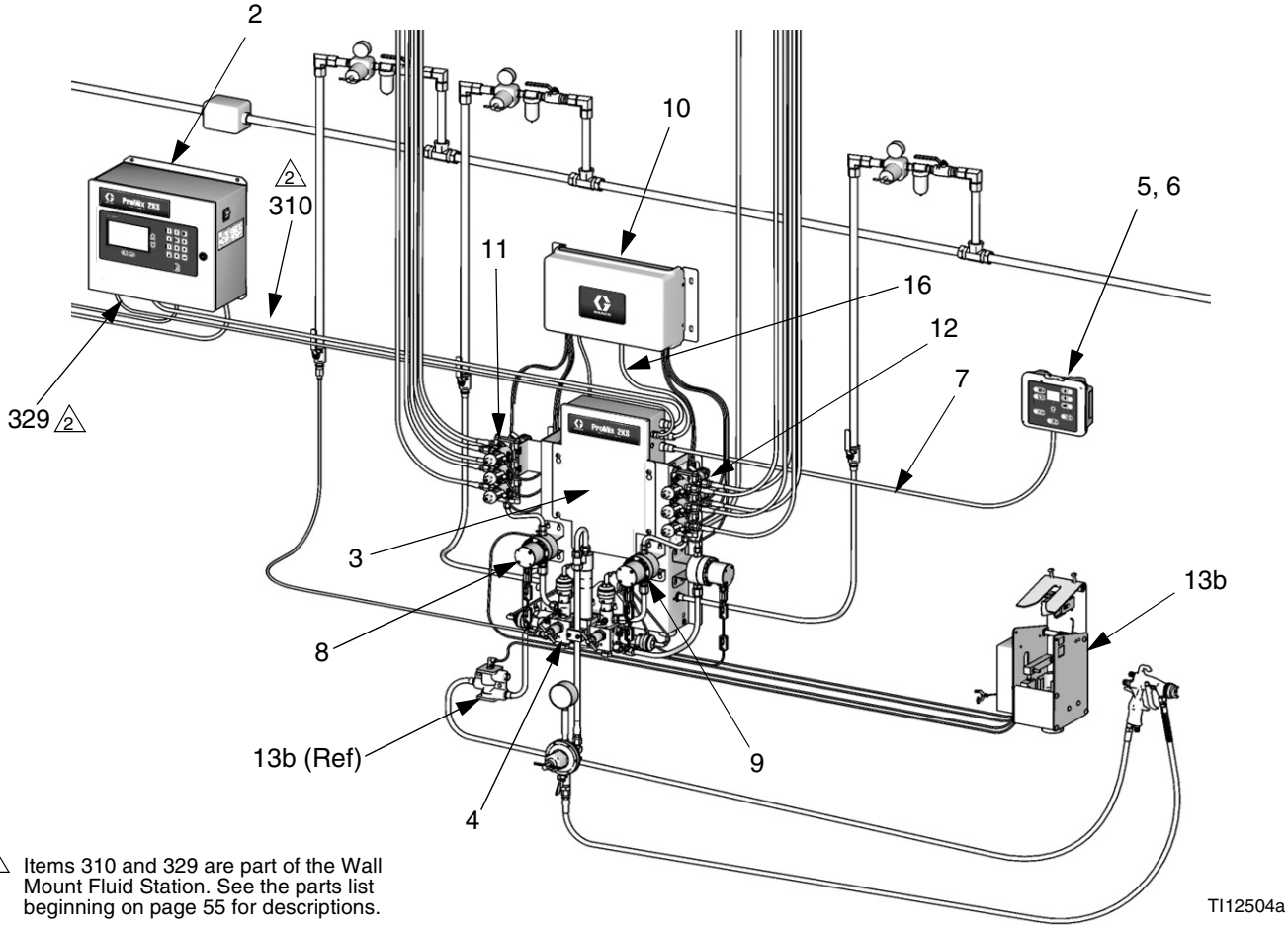
The configured part number for your equipment is printed on the equipment identification labels. See the illustrations below for location of the identification labels. The part number includes one digit from each of the following six categories, depending on the configuration of your system. *The digits in this table do not correspond to ref. nos. in the parts lists or parts drawings.*

Manual System	Control and Display	A and B Meter	Color Valves	Catalyst Valves	Applicator Handling
M	D = EasyKey with LCD Display	0 = No Meters 1 = G3000 (A and B) 2 = G3000HR (A and B) 3 = 1/8 in. Coriolis (A) and G3000 (B) 4 = G3000 (A) and 1/8 in. Coriolis (B) 5 = 1/8 in. Coriolis (A) and G3000HR (B) 6 = G3000HR (A) and 1/8 in. Coriolis (B) 7 = 1/8 in. Coriolis (A and B)	0 = No Valves (single color) 1 = Two Valves (low pressure) 2 = Four Valves (low pressure) 3 = Seven Valves (low pressure) 4 = Twelve Valves (low pressure) 5 = Two Valves (high pressure) 6 = Four Valves (high pressure)	0 = No Valves (single catalyst) 1 = Two Valves (low pressure) 2 = Four Valves (low pressure) 3 = Two Valves (high pressure)	1 = One Air Flow Switch Kit 2 = Two Air Flow Switch Kits 3 = One Gun Flush Box Kit 4 = Two Gun Flush Box Kits



ProMix 2KS Manual System

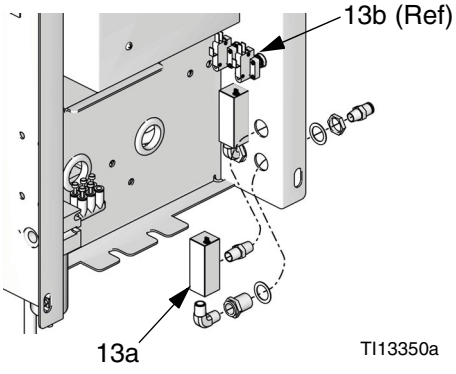
Part No. MD0001 to MD7634, includes EasyKey with LCD display



2 Items 310 and 329 are part of the Wall Mount Fluid Station. See the parts list beginning on page 55 for descriptions.

TI12504a

Detail of Air Flow Switch and GFB Pressure Switch

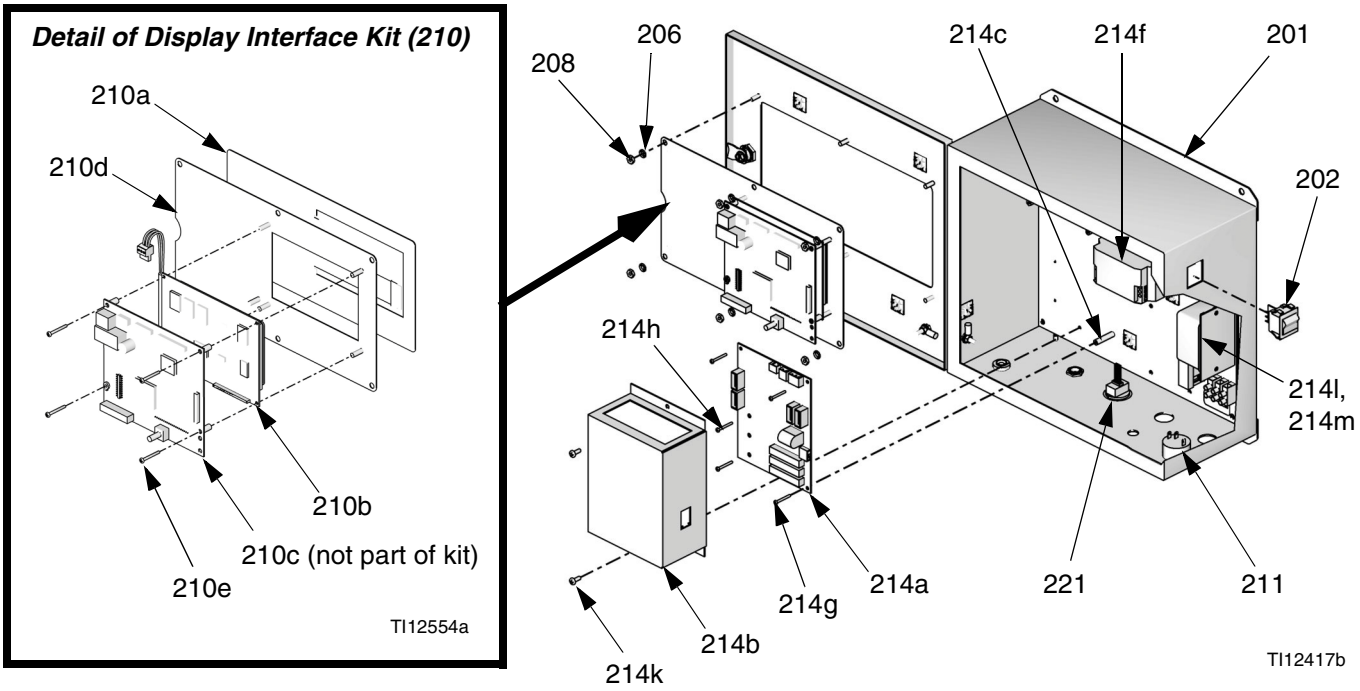


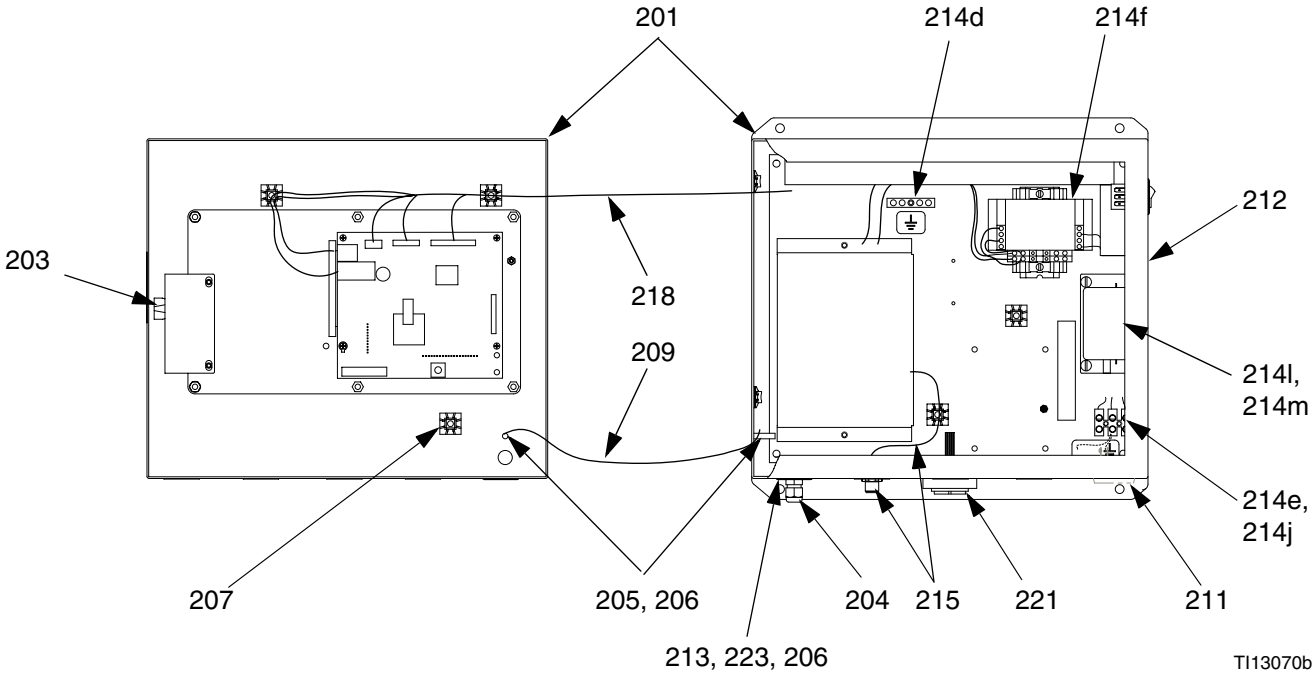
TI13350a

Ref. No.	Configured Digit (see page 49) or part usage	Part No.	Description	Qty
2	D	277869	CONTROL/DISPLAY, EasyKey; see page 52	1
3	standard part	see page 54	PANEL, fluid	1
4	standard part	289695	MANIFOLD, mix; see manual 312781	1
5	standard part	15V350	BOOTH CONTROL; includes items 6 and 7	1
6	standard part	277853	BRACKET, mounting, booth control	1
7	standard part	15U533	CABLE, CAN, intrinsically safe; connects booth control to fluid station; 50 ft (15.25 m)	1
8			KIT, flow meter A	
	0	none	none	0
	1	15V804	KIT, G3000 flow meter; see manual 308778	1
	2	15V827	KIT, G3000HR flow meter; see manual 308778	1
	3	15V806	KIT, Coriolis flow meter; see manual 313599	1
	4	15V804	KIT, G3000 flow meter; see manual 308778	1
	5	15V806	KIT, Coriolis flow meter; see manual 313599	1
	6	15V827	KIT, G3000HR flow meter; see manual 308778	1
	7	15V806	KIT, Coriolis flow meter; see manual 313599	1
9			KIT, flow meter B	
	0	none	none	0
	1	15V804	KIT, G3000 flow meter; see manual 308778	1
	2	15V827	KIT, G3000HR flow meter; see manual 308778	1
	3	15V804	KIT, G3000 flow meter; see manual 308778	1
	4	15V806	KIT, Coriolis flow meter; see manual 313599	1
	5	15V827	KIT, G3000HR flow meter; see manual 308778	1
	6	15V806	KIT, Coriolis flow meter; see manual 313599	1
	7	15V806	KIT, Coriolis flow meter; see manual 313599	1
10	0 - 6	see page 56	MODULE, control, color/catalyst change; see page 56	see page 56
11	0 - 6	see page 56	VALVE STACK, color change; see page 56	see page 56
12	0 - 3	see page 56	VALVE STACK, catalyst change; see page 56	see page 56
13			APPLICATOR HANDLING (AFS or GFB)	
13a	1	15T632	KIT, air flow switch	1
	2	15T632	KIT, air flow switch	2
13b	3	15V826	KIT, gun flush box; see manual 312784	1
	4	15V826	KIT, gun flush box; see manual 312784	2
16	used with color change only	15U532	CABLE, CAN, intrinsically safe; connects color change control module to fluid station; 3 ft (1 m)	0 or 1

EasyKey Controls

277869 EasyKey, with Display





277869 EasyKey, with Display

Ref. No.	Part No.	Description	Qty
201	n/a	CONTROL BOX, with display	1
202	116320	SWITCH, power	1
203	n/a	LATCH; includes item 3a	1
203a	117818	• KEY	1
204	111987	CONNECTOR, cord strain relief	1
205	110911	NUT, hex; M5 x 0.8	4
206	111307	WASHER, lock, external tooth; M5	9
207	n/a	HOLDER, tie	8
208	C19293	NUT, hex	6
209	194337	WIRE, grounding, door	1
210	15X779	KIT, display, interface; includes items 210a, 210b, 210d, and 210e; does not include 210c	1
210a	n/a	• MEMBRANE	1
210b	n/a	• GRAPHIC, display	1
210c	255767	• BOARD, EasyKey display (not part of kit)	1
210d	n/a	• PLATE	1
210e	n/a	• SCREW; 4-40 x 1 in. (25 mm)	4
211	15D568	ALARM	1
212▲	15W776	LABEL, warning	1
213	223547	GROUND WIRE; 25 ft (7.6 m)	1
214	n/a	PLATE, application; includes items 214a-214m	1
214a	255786	• BOARD, barrier, IS; (includes fuses 15D979 and 114788, see page 40 for fuse location)	1
214b	n/a	• COVER	1
214c	117526	• SPACER	3
214d	119257	• BAR, ground	1
214e	114095	• BLOCK, terminal	1
214f	121314	• POWER SUPPLY; 24 Vdc; 2A	1
214g	n/a	• SCREW, machine, pan-hd; 6-32 x 3/8 in. (10 mm)	3
214h	n/a	• SCREW, machine, pan-hd; 6-32 x 1-1/2 in. (38 mm)	2
214j	n/a	• SCREW, machine, pan-hd; 8-32 x 3/4 in. (19 mm)	2
214k	n/a	• SCREW, machine, pan-hd; 10-24 x 3/8 in. (10 mm)	11
214l	123823	• FILTER, line, single-phase; 110/250 V; 3 A	1
214m	123824	• BRACKET, line filter	1
215	15V280	HARNESS, connection	1
216▲	15G569	LABEL, EasyKey inputs	1
218	15R642	HARNESS, wire	1
220	n/a	SOFTWARE, application	1
221	198165	CONNECTOR, RJ45, with bulkhead fitting	1
223	116343	SCREW, ground; M5 x 0.8	1
224	15G869	CABLE, ethernet, CAT5; 6 ft (1.8 m); to make web interface connection to a computer	1

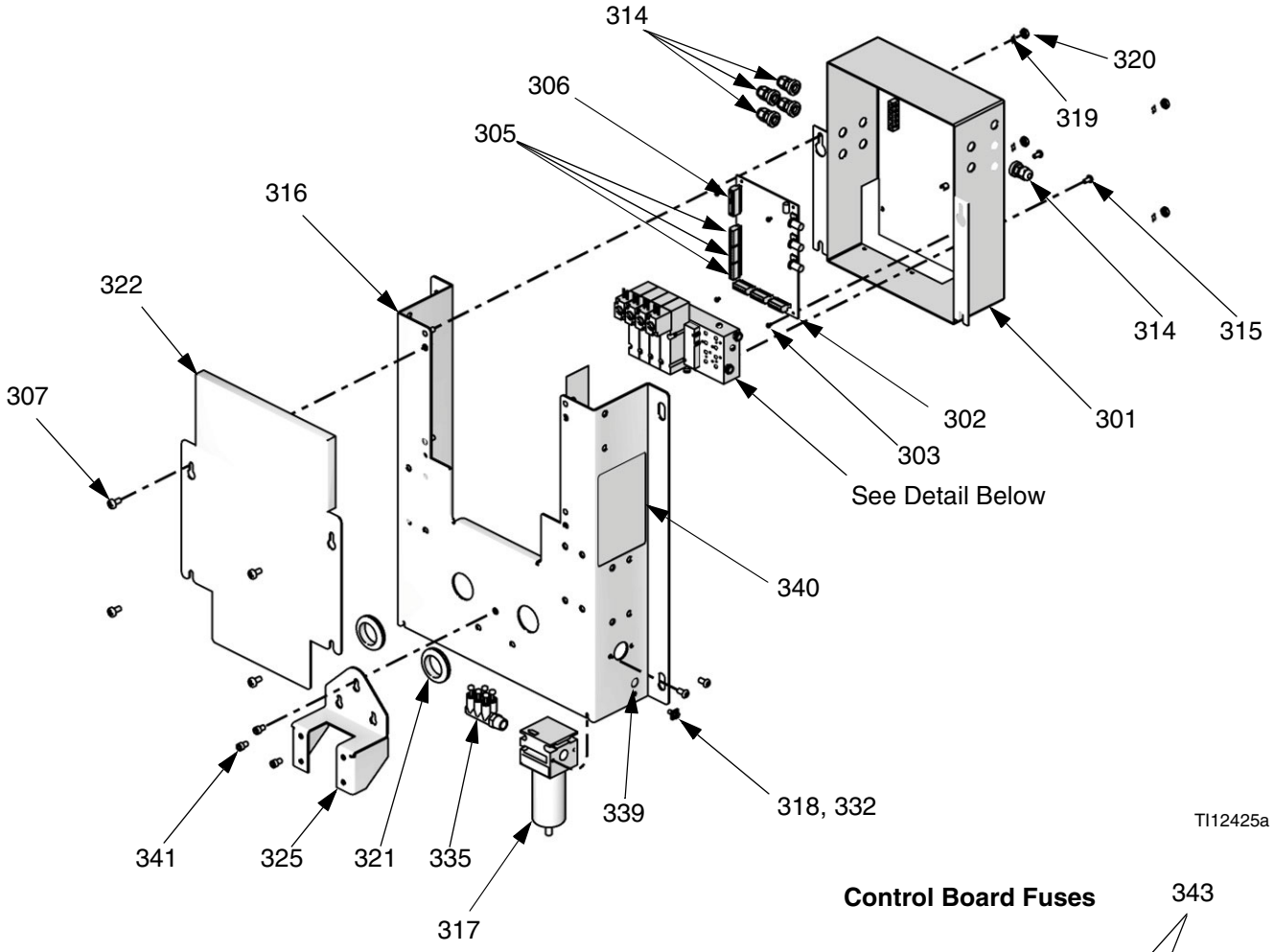
▲ *Replacement Danger and Warning labels, tags, and cards are available at no cost.*

Parts labeled n/a are not available separately.

Available Cables

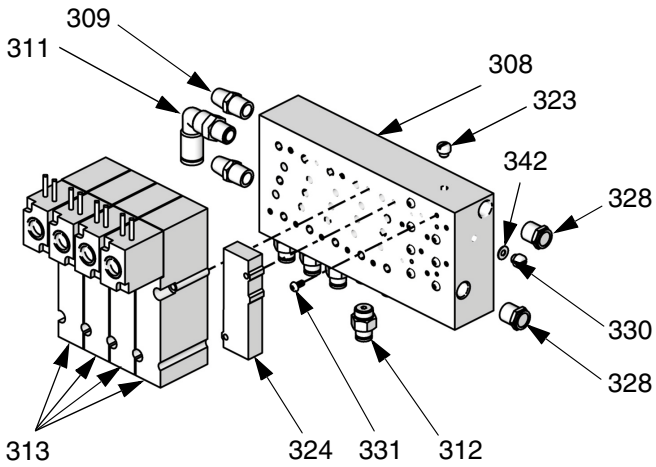
CAN Cables		
Part No.	**Length ft (m)**	**Usage**
15U531	2 (0.61)	Option
15U532	3 (0.92)	Standard color change
15V205	6 (1.83)	Option
15V206	10 (3.05)	Option
15V207	15 (4.57)	Option
15V208	25 (7.62)	Option
15U533	50 (15.25)	Standard power and booth control
15V213	100 (30.50)	Option
Fiber Optic Cables		
Part No.	**Length**	**Usage**
15D320	50 (15.25)	Standard
15G710	100 (30.50)	Option

Wall Mount Fluid Station



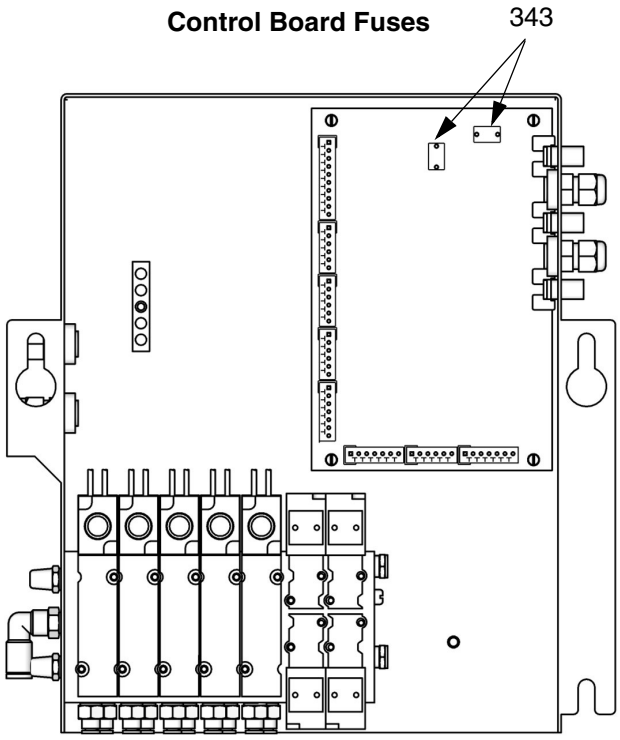
TI12425a

Solenoid Manifold Detail



TI12426a

Control Board Fuses



TI12652b

Wall Mount Fluid Station

NOTE: Parts are shown on page 54, unless noted.

Ref. No.	Part No.	Description	Qty
301	256529	ENCLOSURE	1
302	255765	BOARD, circuit	1
303	n/a	SCREW, machine, pan hd; 4-40 x 3/16 in. (5 mm)	4
304	119257	CONNECTOR, bar, ground	1
305	119162	CONNECTOR, plug, 6-position	6
306	116773	CONNECTOR, plug,10-position	1
307	113783	SCREW, machine, pan hd; 1/4-20 x 1/2 in. (13 mm)	4
308	15R668	MANIFOLD, solenoid, 5 station	1
309	C06061	MUFFLER	2
310	15U533	CABLE, CAN, intrinsically safe; 50 ft (15.25 m); see page 50 for location	1
311	112781	ELBOW, swivel, 90°; 1/8 npt(m) x 1/4 in. (6 mm) OD tube	1
312	114263	FITTING, tube; 1/8 npt(m) x 5/32 in. (4 mm) OD tube	8
313	121374	VALVE, solenoid, intrinsically safe; 12 Vdc	4
314	111987	CONNECTOR, cord strain relief	5
315	114669	SCREW, machine, phillips pan hd; M5 x 0.8; 10 mm	2
316	n/a	PLATE, mounting	1
317	114124	FILTER, air; 3/8 npt; includes 317a	1
317a	114228	• ELEMENT, filter; 5 micron	1
318	116343	SCREW, ground	1
319	100985	WASHER, lock, external tooth; 1/4	4
320	101345	NUT, hex, jam; 1/4-20	4
321	120685	GROMMET	2
322	15U507	COVER, enclosure	1
323	100139	PLUG, pipe; 1/8 npt	2
324	552183	PLATE, blanking	1
325	15U510	BRACKET, valve mount	1
327	n/a	COVER, fluid station	1
328	121072	MUFFLER	2
329	15D320	CABLE, fiber-optic, twin; 50 ft (15.25 m); see page 50 for location	1
330	104644	PLUG, screw; 10-32 x 5/32 in. (4 mm)	2
331	121628	SCREW, machine, self-sealing; 4-40 x 1/4 in. (6 mm)	8
332	223547	WIRE, ground; 25 ft (7.6 m)	1
334	n/a	TUBE, nylon; to connect air manifold (335) to elbow (311) at solenoid manifold (308); 1/4 in. (6 mm) OD; 2.5 ft (0.76 m)	A/R
335	15U679	MANIFOLD, air; 3/8 npt(m) x six 1/4 in. (6 mm) OD tube ports	1
336	n/a	TUBE, nylon, green; for control air to turn valves on; 5/32 in. (4 mm) OD; four 2 ft (0.6 m) lengths	A/R
337	n/a	TUBE, nylon, red; for control air to turn valves off; 5/32 in. (4 mm) OD; four 2 ft (0.6 m) lengths	A/R
338	16J457	TUBE, nylon; for purge air supply; 1/4 in. (6 mm) OD; 25 ft (7.6 m); includes caution label 626413	1
339▲	186620	LABEL, symbol, ground	1
340▲	15W775	LABEL, warning	1
341	C19798	SCREW, cap, socket-hd; 1/4-20 x 3/8 in. (10 mm)	3
342	104640	GASKET	3
343◆	123690	FUSE; 125 mA	2

▲ *Replacement Danger and Warning labels, tags, and cards are available at no cost.*

◆ *Replacing the fuse with a non-Graco fuse voids the IS system safety approval.*

Parts labeled n/a are not available separately.

Color Change Accessory Kits

Low Pressure Color Change Kits

Kit Part No.	Kit Description	Control Module (10; see 312787)	Color Change Valve Stack (11; see 312783)	Catalyst Change Valve Stack (12; see 312783)
256581	2 color	277752	15V812	none
256582	4 color	277753	15V813	none
256583	7 color	277754	15V814	none
256584	12 color	277755	15V815	none
256585	2 color/2 catalyst	277756	15V812	15V812
256586	4 color/2 catalyst	277757	15V813	15V812
256587	4 color/4 catalyst	277771	15V813	15V813
256588	7 color/2 catalyst	277758	15V814	15V812
256589	7 color/4 catalyst	277772	15V814	15V813
256590	12 color/2 catalyst	277759	15V815	15V812
256591	12 color/4 catalyst	277773	15V815	15V813
256592	13-18 color	278113	256293	none
256593	13-24 color	278114	15V815	none
256594	13-30 color	277773	256305	none
256595	1 catalyst/1 flush	278095	none	256994

High Pressure Color Change Kits

Kit Part No.	Description	Control Module (10; see 312787)	Color Change Valve Stack (11; see 312783)	Catalyst Change Valve Stack (12; see 312783)
256596	2 color	277752	15V816	none
256597	4 color	277753	15V817	none
256598	7 color	277754	256343	none
256599	12 color	277755	256348	none
256600	2 color/2 catalyst	277756	15V816	15V816
256601	4 color/2 catalyst	277757	15V817	15V816
256602	4 color/4 catalyst	277771	15V817	15V817
256603	7 color/2 catalyst	277758	256343	15V816
256604	7 color/4 catalyst	277772	256343	15V817
256605	12 color/2 catalyst	277759	256348	15V816
256606	12 color/4 catalyst	277773	256348	15V817
256607	13-18 color	278113	256342	none
256608	13-24 color	278114	256348	none
256609	13-30 color	277773	256354	none
256610	1 catalyst/1 flush	278095	none	256995

Technical Data

Maximum fluid working pressure	*Base system:* 4000 psi (27.58 MPa, 275.8 bar) *Low pressure color change:* 300 psi (2.07 MPa, 20.6 bar) *High pressure color change:* 3000 psi (21 MPa, 210 bar) *Coriolis meter:* 2300 psi (15.86 MPa, 158.6 bar)
Maximum working air pressure	100 psi (0.7 MPa, 7 bar)
Air supply	75 - 100 psi (0.5 - 0.7 MPa, 5.2 - 7 bar)
Air filtration for air logic and purge air (Graco-supplied)	5 micron (minimum) filtration required; clean and dry air
Air filtration for atomizing air (user-supplied)	30 micron (minimum) filtration required; clean and dry air
Mixing ratio range	0.1:1- 30:1*
On-ratio accuracy	up to ± 1%, user selectable
Fluids handled	one or two component: • solvent and waterborne paints • polyurethanes • epoxies • acid catalyzed varnishes • moisture sensitive isocyanates
Viscosity range of fluid	20- 5000 cps*
Fluid filtration (user-supplied)	100 mesh minimum
Fluid flow rate range*	
G3000, G250 Meter	75 - 3800 cc/min. (0.02-1.00 gal./min.)
G3000HR, G250HR Meter	38 - 1900 cc/min. (0.01-0.50 gal./min.)
Coriolis Meter	20 - 3800 cc/min. (0.005-1.00 gal./min.)
S3000 Solvent Meter (accessory)	38 - 1900 cc/min. (0.01-0.50 gal./min.)
Fluid inlet sizes	
Flow Meter	1/4 npt(f)
Dose Valve/Color Valve Adapters	1/4 npt(f)
Fluid outlet size (static mixer)	1/4 npt(f)
External Power Supply Requirements	85 - 250 Vac, 50/60 Hz, 2 amps maximum draw 15 amp maximum circuit breaker required 8 to 14 AWG power supply wire gauge
Operating temperature range	41- 122° F (5-50° C)
Environmental Conditions Rating	indoor use, pollution degree (2), installation category II
Noise Level	
Sound pressure level	below 70 dBA
Sound power level	below 85 dBA
Wetted parts	303, 304 SST, Tungsten carbide (with nickel binder), perfluoroelastomer; PTFE

* Dependent on programmed K-factor and application. The maximum allowable flow meter pulse frequency is 425 Hz (pulses/sec). For more detailed information on viscosities, flow rates, or mixing ratios, consult your Graco distributor.

See individual component manuals for additional technical data.

Graco Standard Warranty

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

THIS WARRANTY IS EXCLUSIVE, AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

Graco's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

GRACO MAKES NO WARRANTY, AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IN CONNECTION WITH ACCESSORIES, EQUIPMENT, MATERIALS OR COMPONENTS SOLD BUT NOT MANUFACTURED BY GRACO. These items sold, but not manufactured by Graco (such as electric motors, switches, hose, etc.), are subject to the warranty, if any, of their manufacturer. Graco will provide purchaser with reasonable assistance in making any claim for breach of these warranties.

In no event will Graco be liable for indirect, incidental, special or consequential damages resulting from Graco supplying equipment hereunder, or the furnishing, performance, or use of any products or other goods sold hereto, whether due to a breach of contract, breach of warranty, the negligence of Graco, or otherwise.

FOR GRACO CANADA CUSTOMERS

The Parties acknowledge that they have required that the present document, as well as all documents, notices and legal proceedings entered into, given or instituted pursuant hereto or relating directly or indirectly hereto, be drawn up in English. Les parties reconnaissent avoir convenu que la rédaction du présente document sera en Anglais, ainsi que tous documents, avis et procédures judiciaires exécutés, donnés ou intentés, à la suite de ou en rapport, directement ou indirectement, avec les procédures concernées.

Graco Information

For the latest information about Graco products, visit www.graco.com .

For patent information, see www.graco.com/patents.

TO PLACE AN ORDER, contact your Graco distributor or call to identify the nearest distributor.
Phone: 612-623-6921 **or Toll Free:** 1-800-328-0211 **Fax:** 612-378-3505

All written and visual data contained in this document reflects the latest product information available at the time of publication.
Graco reserves the right to make changes at any time without notice.

Original instructions. This manual contains English. MM 312777

Graco Headquarters: Minneapolis
International Offices: Belgium, China, Japan, Korea

GRACO INC. AND SUBSIDIARIES • P.O. BOX 1441 • MINNEAPOLIS MN 55440-1441 • USA
Copyright 2008, Graco Inc. All Graco manufacturing locations are registered to ISO 9001.
www.graco.com
Revision E, June 2014